THE CAVALRY JOURNAL

PUBLISHED BI-MONTHLY BY THE UNITED STATES CAVALRY ASSOCIATION

VOLUME XLVIII
NUMBER 4

JULY-AUGUST, 1939
WHOLE NUMBER 214

MAJOR CHARLES S. KILBURN, CAVALRY, EDITOR

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PUBLICATION DATE: AUGUST 10, 1939

THE CAVALRY JOURNAL IS NOT RESPONSIBLE FOR OPINIONS EXPRESSED IN PUBLISHED CONTRIBUTIONS

Publication Offices: 1406 East Franklin Street, Richmond, Va.; Editorial Offices: 1624 H Street, N.W., Washington, D. C.
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Entered as Second Class Matter at Richmond, Virginia, under the act of March 3, 1879, for Mailing at Special Rate of Postage Provided in Section 412, Act of October 3, 1917. Terms: Domestic Subscriptions, individual and organization, $3.00 per year. Foreign, $3.50 per year. All subscriptions payable in advance. Single copies, 75c. Extra copies to subscribers, 50c. THE CAVALRY JOURNAL *does not* carry paid advertisements.

DRESS REHEARSAL FO

By
Major Reginald Hargreaves, M.C.
British Army, Retired

It is customary—and wise—during those periods of suspended strife, known somewhat euphuistically as "peace-time," for the military quidnuncs up and down the world to indulge in a little thoughtful stock-taking. Whatever campaign has recently been concluded has invariably been prodigal in "lessons"; since, in war, both combatants are prone to error, and it is usually a case of the side winning whose mistakes have been fewer and less egregious than those committed by their opponents.

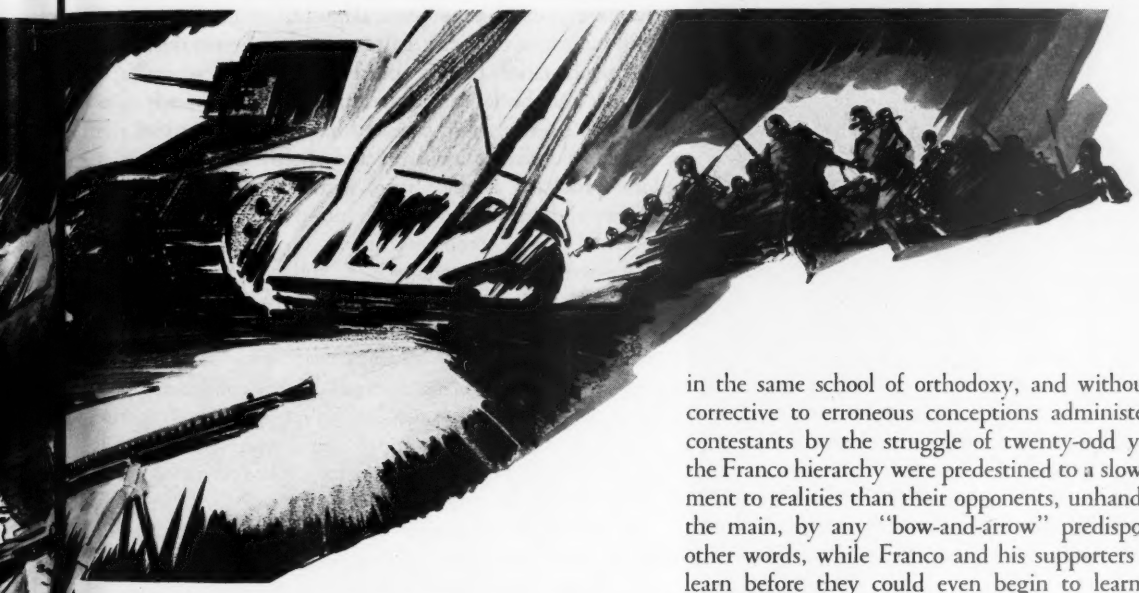
Thus, with the rather pedestrian campaign which has recently been brought to an end in Spain, even if it is going too far to regard it as "a dress rehearsal for the next World War," the usual quota of lessons it has produced is worthy of more than passing consideration by those to whom the art, and practise, of war remains a serious study.

Accepting it as axiomatic that the strategic principles of war remain unchanged and that only their tactical application undergoes modification, it is to an investigation into the battle-methods employed in this most recent struggle that this enquiry will confine itself.

The first thing that emerges, quite clearly and unequivocally, is that the advantage—as in the 1914-18 World Crisis—remains very largely on the side of the defence. The machine gun, the concrete mixer, and that mechanically produced "Wait-a-bit" thorn we call barbed wire have seen to that. Nonetheless, although the scales are definitely tipped on the side of the defender, they are not so mercilessly weighed down in his favour as some prognostications had anticipated. Given sufficient preponderance in the air (with unlimited munitions), and the inhabitants of a rigid trench line can be so far devitalised that an *assault à outrance*, if it is prepared to sustain loss in a ratio of at least 5 to 2, *can* pierce a defensive system effectually and decisively. This bull-at-the-gate method was tried out in the earlier days of the assault on Madrid; and making all allowance for the rawness of the troops opposed to Franco's assailing legions, the fact remains that the latter did manage to carry a reasonably well-dug and wired defensive system by a series of frontal attacks. The cost, however, both in rifle strength and in morale, was so inordinate as to set the leaders on the Red[1] side, no less than Franco himself, excogitating an alternative method of obtaining their objectives. It must be allowed

[1]Be it noted that the terms "Red" and "Rebel" are used throughout purely with the idea of ensuring easy identification, and without any indication of bias, one way or the other, whatsoever.—THE AUTHOR.

THE NEXT WORLD WAR



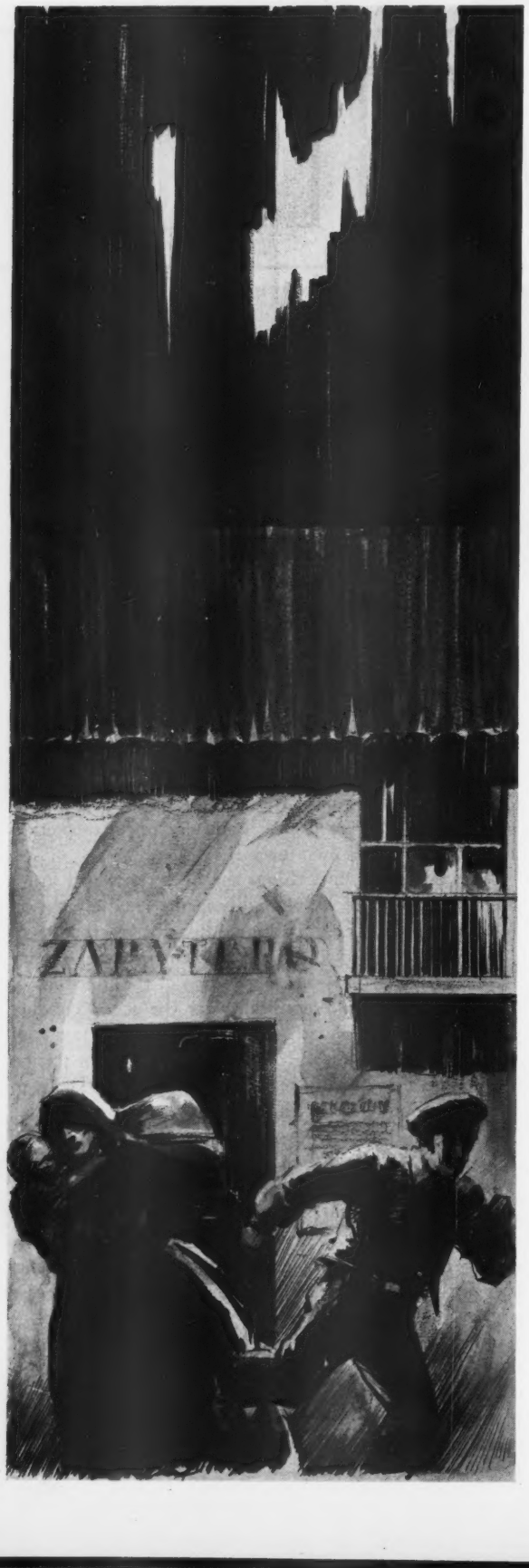
It is axiomatic that the strategic principles of war remain unchanged and that only their tactical application undergoes modification.

that to the Red leaders must go the credit for first disinterring the principle of "infiltration" from the sepulchre of neglect where in it had hitherto lain unregarded.

That it was the Reds rather than the Rebels who were the first to take this initiative is really less surprising than at first appears. The old conception of the commander, sumptuously mounted on his conspicuous charger, directing the battle in person from some convenient coign of 'vantage, fortuitously overlooking the scene of action, is one that dies remarkably hard. Despite its obvious impracticability in those days when the sheer power and range of the engines of war had operated to force an ever increasing recession on the part of the command, it was a conception to which many general officers still clung mentally—unconsciously, maybe, but with an inherent tenacity—during the campaign of 1914-18. Brought up in the same school of orthodoxy, and without even the corrective to erroneous conceptions administered to the contestants by the struggle of twenty-odd years agone, the Franco hierarchy were predestined to a slower readjustment to realities than their opponents, unhandicapped, in the main, by any "bow-and-arrow" predispositions. In other words, while Franco and his supporters had to unlearn before they could even begin to learn, their adversaries had only to learn. Thus, for once, theoretical inexperience was its own reward!

Thus one of the first things the Reds succeeded in assimilating was the folly of bull-headed frontal attacks on a strongly-held enemy position. But the alternative of "infiltration" embodied a requisite of considerable novelty and peculiar exaction—the *devolution* of the functions of command until the responsibility for the actual conduct of the battle rested with subordinate officers, rarely of greater rank than that of company commander or section leader, and infrequently reaching back even so far as to the actual commander of the battalion.

It has long been realised, of course, that beyond planning a battle to the best of their ability, and taking such provision against contingencies as their experience and imagination can envisage, the higher command can do comparatively little. Once zero hour has arrived, events, during their earlier and crucial stages of development, pass out of the staff's control. They can putty-up here; add a little extra pressure there—generally too late!—stand by to exploit a success, if such is achieved; throw in reserves in time—if they are lucky!—to stem any enemy counter attack or to launch one of their own; or, at worst, plan a fresh operation upon the residue of the first effort if nothing more has been accomplished than a stalemate. But that is about all.



A successful battle, in effect, is one which, in the first instance, has been well-planned, and, thereafter, has been well fought and alertly directed by the subordinate commanders on the actual fighting ground itself.

This, as will be obvious, demands a high degree of flexibility and intelligent coöperation on the part of the company officers and section leaders, who, above all things, *must thoroughly appreciate the purpose and intention of the operation with whose prosecution they have been entrusted.* This, in turn, demands the most careful working out of the operation's "general idea"; while the details of the execution of the "particular idea" must be framed with sufficient elasticity to permit of their readjustment and readaptation to the quickly-changing aspects of the combat by the leaders actually on the spot. Such subordinate leaders must patently be men possessed of the ability to arrive at a correct and speedy decision on the local problems as they arise, without reference back to higher authority, whose intervention and decisions in all localised tactical problems must—such is the pace, and space-demand, of modern war, and the continued unreliability of forward communications—be so delayed in transit as to be stultified or out of date before they can achieve delivery—even allowing that they ever do!

This conception of battle-control is, of course, in direct contradiction to the theory of *Fuehrer-prinzip* (or control by the central leader), upon which the Germans have always relied, if we except the operations directed by Ludendorff against the British Fifth Army in March of 1918. Yet this *Fuehrer-prinzip* theory of battle-control was one upon which the Franco staff continued to rely long after their opponents had abandoned it as impracticable under modern war conditions, and were groping their way towards the application of those methods of "infiltration" they were subsequently to employ with a really remarkable measure of success.

* * *

Infiltration, as will be obvious, demands a certain measure of looseness in the opponent's system of defence before it can be successfully essayed. Against a long, well-dug, adequately-wired, concrete-and-pill-box-strewn defensive line, it can, at best, only be employed after heavy preliminary bombardment to clear the way and in conjunction with smoke screens to shroud the movements of the assaulting troops; aided by tanks at their most protean.

But against an elastic defence line, held in depth and wherein the forward zones are maintained in, possibly, too great strength at the wrong points; or with a tactically unsound dispersion of the front line garrisons so as to leave penetrable gaps, infiltration stands an excellent chance of success. But, as has already been said and can well be said again, the accompanying corollary is that the subordinate leaders *must* know the purpose of their activities, and be sufficiently capable of swift readjustment to local circumstances to achieve them by means which have only figured as an alternative in their previous orders, or in their own excogitations of them.

Of equal importance is the composition of the force by which the assault by infiltration is to be conducted. And in this connection, an examination of the action fought, late in 1937, at Fuentes del Ebro well repays the closest scrutiny and analysis.

Against a well defended but not fixedly rigid line held by Franco troops, the Reds launched an attack in which, while the more thickly protected sectors were to be cautiously assailed on orthodox lines, infantry with a liberal supply of machine guns, carried as passengers by, and in conjunction with, tanks in considerable numbers, were to push right through, avoiding all strong points, redoubts, fortified villages and the like, and keep on going until they reached a position well behind the enemy forward zone and right athwart his lines of communication. In its initial stages the operation was crowned with almost complete success. The mosquito-cloud of "infiltrators" pushed right through and landed, without encountering serious opposition, on their ultimate objectives. The infantry promptly went to ground, and the tanks took a look round, "seeking whom they might devour."

It was then that things started to go wrong.

Cover there was for the infantry and machine-gunners in reasonable sufficiency; but where the tanks were concerned there was nothing for it but for them to remain "naked and unashamed before their enemies." Unhappily, too, the array of their enemies included a useful force of field artillery, which lost no time in getting the armoured pachyderms range. Unable to "stay put," since that presented the hostile gunners with a stationary rather than a moving target, many of the tanks were kept so perpetually circling around as to exhaust their supplies of gasoline; whereafter they became no more than a gift to the opposition. Others became hopelessly bogged in their attempts to achieve low-lying cover and, like the first-named victims of short-sightedness, had to be abandoned. The artillery also registered a considerable number of direct hits.

The infantry and machine-gunners who had pushed through with the tanks, proved too few in number to do more than hold on for a time in the positions to which they had penetrated; whence they were compelled, eventually, to retreat, suffering a high percentage of loss in the process.

The main holding attack having by this time been brought to a standstill by the superior volume of fire developed by the defence, the net result of the joint enterprise was the gain, on the part of the offensive, of a few unimportant sections of ground at the cost of very heavy losses, in tanks, machine-gunners and infantry—*in that*

order. It should be added that, in the main, the Franco machine-gunners were either unaware of, or disregarded, the fact that hostile forces had passed them and, for a time, threatened to cut them off.

The lessons to be derived from the stultification of this well-intentioned, if maladroitly devised, attempt to mount an attack by infiltration in force, are not far to seek.

Firstly, the mosquito-cloud of infiltrating infantry and machine gunners was far too small, constituting, all in all, no more than a *point d'appui* rather than a force formidable enough to impose its will upon such considerable bodies of the enemy as the rearward zones would be capable of producing.

Secondly, the number of tanks accompanying the mosquito-cloud was far too many. In this particular, almost invariably, experience during the Spanish conflict points to the fact that the tank does *not* supply the solution to the problem of how to make an attack easy and relatively inexpensive which its more obdurate advocates would claim for it. In the two years of their participation in the struggle, so one of their battalion commanders has recorded, the British contingent of the International Brigade was seriously impeded on three occasions only by hostile tank action. In many engagements they were able to stalk and drive back the moving fortresses to the cover and protection of their own infantry and machine-gunners.

Noisy, short-sighted, necessarily nervous and intensely sensitive to terrain, with a bad gun-platform when in movement, when stationary a target to bring tears of joy to the eyes of any gunner, the tank has had to resign its claim as *prima donna* and reconcile itself to becoming just another member of the cast. In which connection, the highly efficient English commander of the battery of anti-tank guns attached to the International Brigade has given it as his considered opinion that his handy little weapons could be relied upon to knock out any enemy tanks, at whatever speed they might be travelling, that came under his sights up to a distance of two miles; and this while the position he himself occupied offered no more than a negligible target. Of this ability he was absolutely convinced, as he was of his certainty in not getting embroiled and swamped in any surprise sprung upon the defensive line of which he formed part, always providing that he was allowed to site his guns within half a mile or so of his leading infantry; but not in line with it, as was advocated by the Germans.

In effect, the most that experienced men, on both sides, were prepared to allow of the tank was that (like the machine-gun of old), it constituted, in the hands of swift-thinking, keen-witted, opportunists, aware of its limitations as well as of its possibilities, a weapon *of* opportunity, to be utilised with discretion and within the definitely limited orbit of its sphere of usefulness. In support of this heterodox contention, it was pointed out that at Brunete the Franco troops had utilised, in conjunction with their infantry, tanks in mass, in an effort to steal the thunder of their adversaries and pull off an inexpensive advance; with the result that casualties inflicted on their tank corps were heavier than the average of infantry casualties. In the counter-offensive, despite the fact that the Rebel troops were badly furnished with anti-tank weapons, their field guns were able to knock out a heavy proportion of such Red pachyderms as were put into the field. "And," so the writer's informant insisted, "there was nothing wrong with the tanks—as tanks."

The obstruent will argue that, as Spain is "a bad tank country," all this constitutes no real confutation of their belief in the armoured vehicle's all-round efficacy. To which the reply must be that most potential cock-pits are "bad tank countries": the Argonne and Galilee are too rough and broken; Flanders, the Masurian Marshes, the Chapei rice fields, the snow-plains of Poland, are too wet; the sand and stone deserts of Arabia and Libya too shifting; the dongasplit uplands of India's northwest frontier offer impossible going; in effect, that far too few pleasant grassy slopes, such as Cambrai provided, are liable to present themselves. So what it comes to is, if anybody wants to play around with tanks in mass, he will have to wait until he can declare war on a nation possessing a really "good tank country!"

So far as the Fuentes del Ebro attack is concerned, the conclusion seems obvious that if cavalry—cavalry with its superior mobility, its noiselessness and power of dispersion, its greater ability to take advantage of cover, and its all-round range of vision—had been employed in place, or very largely in place, of tanks the result might very well have shown a notable difference in favour of the attackers. For too often it is forgotten, or overlooked, that the tank is not so much a substitution for, as a specialist amplification of, the mounted branch; and that, given an area or conflict which permits of war of manoeuvre, there still remain innumerable functions which can best be fulfilled by the *arme blanche,* and a few which only that overdenigrated service can successfully perform.

But then, cavalry simply cannot be improvised in a hurry, nor trained to efficiency by any save a lengthy process. And although Franco possessed a fair number of reasonably good native mounted troops, timidity invariably marked his employment of them; while the Reds, being an almost entirely extemporised force, suffered from an absence of anything like an adequate and properly trained body of cavalry throughout the entire campaign.

* * *

Spain has provided almost equally striking refutations to many of the prophecies indulged in with regard to the preponderant influence, in a military sense, capable of being exerted by the forces of the air.

Where the bombing of cities is concerned a factor in the conduct of all future wars which no amount of anterior pietistic pact-signing will be likely to affect—it is clear from the example afforded by the Madrelenõs, that providing the morale of the civil population survives the initial shock and alarm created by aerial bombardment the tendency is for the will of the non-combatant to stiffen into a dogged determination to stick things out on the home front and pray, meanwhile, that a sanguinar

vengeance will be exacted by his own air force on the *bouches inutiles* of the other side. In other words, the attempt to cow the population of a big city by persistent air attack, if it does not attain its object within a very limited period, were better abandoned lest it generate a "hate-fixation" (to employ the modern jargon), so fortifying to the general civilian morale as to constitute a definite asset.

With regard to the purely military employment of the air offensive, the examination of the report of an actual participant in two "sample" instances may be regarded as producing an impression typical of the general reaction. Captain Tom Wintringham,[2] successively adjutant and commander of the English contingent of the International Brigade, has categorically stated that "a battalion of infantry, well intrenched, can be bombed and machine-gunned by a dozen 'planes, which visit and revisit them all day, without suffering casualties to the extent of one per cent." with regard to infantry in the open, who, at the first sight of a 'plane, go to ground, well extended and distributed, and who, thereafter, *keep still*, they can expect to suffer casualties to the extent of from three to five per cent.

It is a very different story, however, when it comes to the movement of mechanised forces along highways from which it is impossible for them to break away. During the general offensive around Guadalajara, for instance, after the Italians' deep penetration of the Red defences, such motley collection of bombers and fighting machines as the Reds then had at their disposal were hurried into the air in an attempt to halt, or at least delay, the two mechanised Italian divisions, hastening forward to reinforce their fellow-countrymen's successful thrust. The 'planes were sent into action during heavy rainfall, with a cloud ceiling from three to five hundred feet up. There was also ground haze; but that entirely failed to obscure their targets—two main roads packed with the lorries, cars, artillery, dragons, and numberless attendant vehicles which constituted the Italian mechanised column's establishment.

The first bombs, dropped at the head of the column, did sufficient damage to bring the whole convoy to a standstill; and for a moment the men, gripped in a paralysis of startled inaction, sat mumchance in their trucks. Then, on a common impulse, the olive-coated soldiery started to abandon their vehicles in a frantic scramble for cover; only to come under the fire of the fighter machines bustling up and down each side of the road. Defence by the Italian antiaircraft guns never got going; before they could be trained, the raiding 'planes had again sought the obscurity of the cloud-wrack; only to emerge again from another direction to continue the work of destruction and demoralisation. Drivers tried to turn their heavy charges on to the fields, only to overtip them or sink them axle-deep in mud. Groups of men, bunching as men always will when panic supervenes, fell an easy prey to the busy machine-gunners roaring overhead; many of the drivers of vehicles which had remained stationary were killed or wounded where they sat. In effect, in a little over half an hour two divisions, strung over some fifteen miles of road, had been put out of action to such an extent that the offensive they were intended to drive home petered out for want of the necessary reinforcement.

It would certainly appear, as Wintringham has himself opined, that "daylight advance by infantry or machine-gunners under air menace is difficult but not impossible. Daylight movement by mechanised forces along roads that are not heavily picketed with antiaircraft weapons, is suicide"—unless, of course, it is known for a certainty that all hostile aircraft in the vicinity will be heavily engaged, either by your own air arm or upon the destruction of some other objective.

In counter-example of the foregoing incident, at Brunete, a fortnight of intensive bombing by an air force relatively unhindered by inadequate counter-measures, and working from clear skies, was unable to do more than save from capture the ultimate objective of the advance, situated between ten and fifteen miles beyond the original point of attack. Again to quote an actual observer's words, "the reason for the contrast lies in the strength of 'planes against a modern (i.e. mechanised) army, and their relative weakness against an army consisting of machine-gunners and riflemen." To which he might well have added, and of horsed troops equally skilled in the art of dispersion and the trick of taking effective cover.

What, then, are the general conclusions which emerge from even this relatively cursory study of the modern conditions of warfare?

Firstly, it is suggested, that a new conception of what is implied by the term discipline constitutes one of the primary and most vital considerations upon which those responsible for the training of troops should concentrate their attention. The aim of discipline has always been the training of the soldier's mind until, under the strain of action, it is automatically capable of the right response to the military need of the moment; of the instinctively correct execution of an order, delivered in all the heat and bewilderment of action, That, of course, still remains the core of disciplinary training. But, under the increasing trend towards devolution which the conditions of modern warfare impose, it should be clearly realised that the order the soldier springs mechanically to obey will, more often than not, be one that he has been obliged to issue to himself!

Sound, imaginative, flexible planning before action is joined is as essential now as at any time in the history of war. But the quietus has been given to the old "chessboard" type of meticulously detailed planning, beloved of the Moltke and Schlieffen school; and in these days the demand is for something more supple and less liable to "seize-up" should an accident occur to one small cog in the wheel.

[2] Wintringham fought in the 1914-18 campaign, and its lessons were no more lost on him than those of the Spanish conflict, on which he has reported with the trained lucidity of the professional writer no less than with the natural-born soldier's military insight.

This increasing trend towards devolution can be attributed, in part to the sheer size of modern armies, spread over an area which denies direct control to the commander; and partly to the firepower of modern weapons, compelling the "directive," if it is to function in reasonable and necessary immunity, to a remoteness which puts a premium upon delay in the transmission of intelligence and orders. For still no system has been evolved which will preclude the breakdown of the chain of communications during the actual period of battle fighting. Indeed, communications remain a problem in the solution of which less headway has been made than in any other aspect of war.

(*Inter alia,* the "unreality" which is the curse of peacetime manoeuvres is never more dangerously unreal than in this matter of communications. Messages and orders flow to and fro with a punctuality and celerity which argues complete oblivion to the incidence of enemy action, creating an entirely false impression of the conditions that would actually pertain were "the buttons off the foils.")

Secondly, it would seem clear that the extravagant claims advanced on behalf of the tank and the aeroplane, as marking as great a leap forward as characterised the substitution of the musket for the bow and arrow, will have to be reoriented with a little more modesty. That both engines have their usefulness, can fulfill many useful functions, it would be foolish to deny. But that they possess protean and overwhelming qualities against which it is impossible to take adequate counter-measures, is not borne out by experience.

Thirdly, that while the mechanisation of the brigade and divisional unit offers many advantages, the process inevitably suffers from the defects of its own qualities. It is unnecessary to emphasize that any new device capable of inflicting destruction must possess significant usefulness within the boundary of its own limitations. The folly lies in attributing talismanic powers to an engine of limited potentialities. Thus, while armoured vehicles obviously offer protection from small-arms ground fire, their very size and solidity render them grateful targets for heavier ground weapons and from the air. Apart from the not inconsiderable problems of supply, it may fairly be affirmed that the more heavily you mechanise the offensive, the more immune will it be from injury from the bullet of the machine-gunner and the rifleman. At the same time, with every added vehicle, with every additional pound weight of armour plating, so from the air as from the heavier ground weapons, the target becomes more sensitively vulnerable.

* * *

Squatting amid the rubble of ruined Ypres one bright morning in the early Spring of 1918, the writer and a brother officer (now holding a position of pre-eminently high command), turned their eyes from the fiery conclusion of an aerial combat, which had brought both 'planes crashing to the ground in flames, to the melancholy spectacle of the flats towards Passchendaele, littered with their fringe of bogged and splintered tanks. It was some time before the future Generalissimo spoke, and then it was to mutter, almost to himself: "All wars wind up in very much the same way: when all the latest ingenuities have mutually cancelled each other out; when there aren't any more cunning little tricks left up anybody's sleeve, then things get down to a couple of men in a ditch, with their hands on each other's throats—and eventually one of 'em will win!"

Allowing for the natural floridity of metaphor, it is a verdict we can still ponder with advantage!

☆ ☆ ☆

Horse's Place in War

The Horse Show at Olympia was as interesting as ever, especially in the changes that are taking place among the competitors from this country. It was painfully noticed that the R.M.C., Sandhurst, sent no entries for the gentlmen cadets' jumping. The R.M.A., Woolwich, sent eight. Indeed, gunners came out strong in the jumping competition, both Regulars and Territorials. It would have been comforting to see more Yeomanry officers taking part in the Horse Show, for it is to them that will fall the task of reinstating British Cavalry as such, whenever Authority realizes that the horse has still its place in warfare. That time may not be far distant.—*The United Services Review*, London, July 13, 1939.

TANK ATTACK IN SPAIN*

By Brigadier General Henry J. Reilly
Officers Reserve Corps

(Note by the translator: Throughout this article, as with nearly any other non-professional magazine either in France or any other country, no distinction is made between the words "tank," "char d'assaut," "char legar," and the like. All these apparently refer to the same type vehicle. From other sources and to the best of my knowledge, this attack was made with Russian tanks modeled after the English Vickers-Armstrong six ton light tank, profiles and dimensions of which are given in Figure 1. According to German sources its crew is three men, and it carries a 47-mm. cannon and a 7.69-mm. machine gun. It has a maximum speed of thirty-five km.)

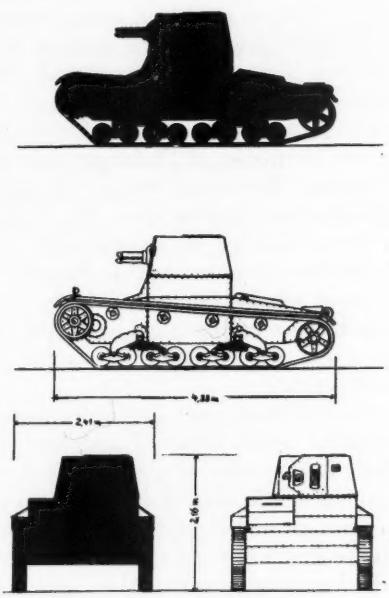


Figure 1

Brigadier General Henry J. Reilly, who was, as a lieutenant, an instructor in history at the United States Military Academy, and at the end of the World War commanded an American light artillery regiment on the French front, and later a brigade of infantry, has just spent several months in Nationalist Spain; a part in the general area around Saragossa, and more on the active fronts of the Northern or the Eastern Armies. He brought back with him many observations, and especially the account of the attempt made by a hundred armored cars to break through a line of trenches. This feat, although now fourteen months old, still taught a notable lesson.

*A translation by Lieutenant T. L. Crystal, Jr., Field Artillery, of an Article in *L'Illustration* (France), January 28, 1939 issue.

When the World War of 1914-1918 ended under the dull sky of November, on that memorable morning of the eleventh, an important unanswered question was the rôle of the tank in future wars.

The tanks, a product of the needs of the World War, arrived too late and in too few a number on the actual field of battle to receive a definite category as to either their possibilities or defects. Nothing was proven, other than that a new arm had been added to the panoply of Mars.

And so, two schools of thought developed.

One, struck by the possibilities that the tank had offered, notably during the battles of Cambrai in 1917 and in August, 1918, predicted for it a future comparable only to the most glorious days of knights in armor when opposed only by the simple infantryman before the invention of gunpowder. This school claimed that mass attacks of tanks, accompanied by motorized infantry, artillery and sometimes by aviation, formed a virtually independent force and appropriated from the infantry its title of "Queen of Battle." The leading proponent of this school is without a doubt the brilliant English General Fuller. It was to his theories that the English subscribed in the postwar years, and they were the first to develop this new arm.

The three German "Panserdivisionen," which constituted an independent army corps, were organized along similar lines. The speedy triumph of Italy over the Ethiopians was due, in a large part, to the tanks and air corps.

The other school was convinced that the infantry was still the "Queen of Battle," and that the artillery remained its "Prince Consort," while the tanks were only another servant of the pair. This is, in a general way, the view held by both the United States and France.

The Spanish Civil War has lasted two and a half years. The Italians and Germans have tried out many types of tanks and calibers of antitank guns, while the great majority of armored cars and antitank weapons used by the Government forces were of Russian manufacture, or of Spanish make patterned after the Russian. The two adversaries made a complete trial of these Russian tanks, because the Nationalists have captured many of them and even used them against their former owners.

The more the war in Spain drags out, the more the combatants, the high command and even the infantrymen, tend toward the adoption of tanks armed solely with a cannon (in this case of a caliber of 45-mm.).

General Monasterio, Commander-in-Chief of the Nationalist Cavalry, told me one day while speaking of armaments and military tactics: "The war would have been

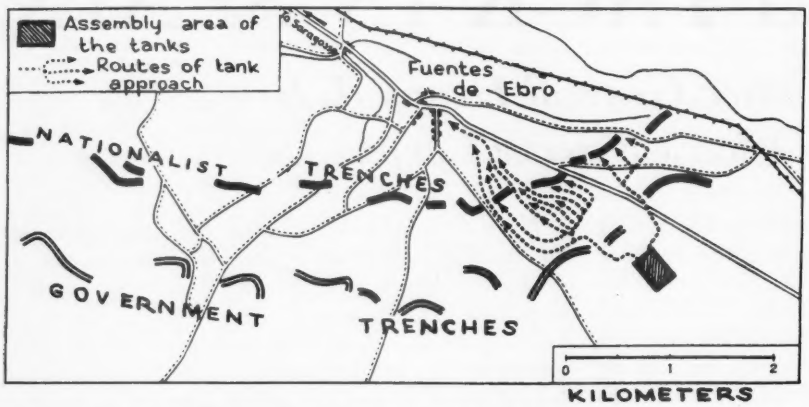


Figure 2: Dispositions for an attack made by Government troops at Fuentes de Ebro. About one hundred combat cars or light tanks made a mass attack at the point shown and were repulsed with great losses.

terminated already were it not for the power of our enemy being made so great by the possession of many armored cars equipped with cannons."

The Battle of Fuentes de Ebro on the 13th of November, 1937, definitely established, at least for this war, the rôle evolved for the tank.

Before this battle opinions differed, mainly with respect to one point. This was relative to light cars armed only with machine guns. In combat it was definitely established that these cars were not able to overcome either the difficulties of the terrain or the fire of the enemy. Confronted with a tank armed with a cannon, they were on a par with the foot soldier of the middle ages clothed in his leathern jacket, opposed to a knight in armor.

Ever since the Battle of Fuentes de Ebro, neither the Government troops nor the Nationalists had the slightest doubt as to the rôle to be played by the combat cars.

In this attack, the Government army relied on the strategic success of a breach in the Franco front formed by the valley of the Ebro River, and on the tactical success of an assault of armored cars against Nationalist infantry holding an entrenched position at that point.

Approximately ninety to a hundred Government tanks attacked seven Nationalist companies entrenched on both sides of the national highway between Tarragone and Saragossa at a point 27 kilometers from the latter.

For an account of what happened, I can do no better than to give the exact words of one of the men there engaged, 2d Lieutenant Antonio Quarte Alfarez: "The attack took us by surprise," said Quarte. "Suddenly, we heard the noise of the approaching tanks. It got louder, coming from the other side of the crest occupied by the enemy some 500 or 700 meters to our front. Then a column of tanks, which seemed endless, began to form, coming out of a breach in the enemy trenches, and headed for the spot which I held with my platoon. (See Figure 2.)

"After going about 100 meters on the slope in front of us, the car which formed the head of the column obliqued towards the right, and travelled thus parallel to our line of trenches in the direction of the national highway.

"At the instant that the end of the column executed the same movement, a red flag was waved from the leading car. At this signal, every ninth or tenth car made a half turn to the left, toward our position.

"These cars were each followed by five or six others, thus making nine or ten columns or about six vehicles each headed for us.

"The other tanks, to the number of about thirty, ranged themselves in a single line and fired on us with their cannons.

"The enemy artillery batteries did not open up; these thirty cars armed with cannon and the cannon carried by most of the others advancing on us, constituted the only artillery supporting the attack.

"We had no artillery, but only three antitank guns of 37-mm. caliber, one on a small hill on the right of the enemy company and to the left of mine, another on the Saragossa national highway and the third on the extreme left, on the bank of the Ebro. My company, the 51st of the Thirtieth Division, was on the right of the highway. The 19th Company was on our right. On the left of the road were two companies of Phalangists and two companies of regulars. These four last held the line between the Saragossa highway and the Ebro. The tank attack to which they were subjected was less intense than ours. On their side, had the terrain not been so irregular, it would have been more suitable for the attack than ours. The terrain in front of my company and half of the 19th Company close to ours, was perfect for the combat cars. Here came the main attack.

"About half of those which attacked carried sandbags on them behind which crouched soldiers. Those men behind these barriers who were not knocked off by our machine guns were effectively dislodged by hand grenades when the tanks got within good throwing distance. Very few of the tanks reached our trench. Their crews were rapidly killed or taken prisoner. Many attackers jumped out of their wheeled coffins as soon as they were within range of our grenades and fled.

"The closer the tanks got the more they lost their beautiful formation. They avoided the places where our resistance was the greatest or where the trenches were on a slight rise, and headed always towards the least cut up sections of our line.

"We stopped several by throwing glass canteens of sulphur and of gasoline in their caterpillar treads, their gas tanks and their ventilators and by hurling hand grenades at them.

"When the first tanks had broken through the several openings which were in our line, we waited without fear the thirty others, which had, with their artillery, supported the movement and now were advancing on us. The enemy infantry had also come out of their trenches and seemed ready to charge.

"We left the tanks which had succeeded in getting through our defenses to the attentions of the companies in reserve, who were holding the ravines behind our trenches. We could hear the din of a violent struggle behind us, principally, in the hollow separating our little crest from the village.

"Soon we saw two tanks in flames emerge from the village, come down the main highway, and retire towards the enemy lines. Then others, which had not yet been disabled, tried to return through the breaches and the more level portions of our defenses. Several escaped, but the others were burned while returning and destroyed without having attained their objective. On the right of the 19th Company an antiaircraft gun annihilated one tank which tried to fire on that side and stopped those which formed the left flank of the thirty others, all enfiladed in their support formation.

"As soon as the retreat was definitely under way, these reënforcing tanks retired, and the infantry returned to their trenches.

"We then led about half of our men to the rear to complete the destruction of those vehicles which were still trying to make good their retreat. We captured sixteen. Two had reached the village, but the stone houses and narrow winding streets had not proven a favorable place for maneuvering the cars. The command-post personnel of the battalion commander, the rear echelon, and the cooks set them on fire."

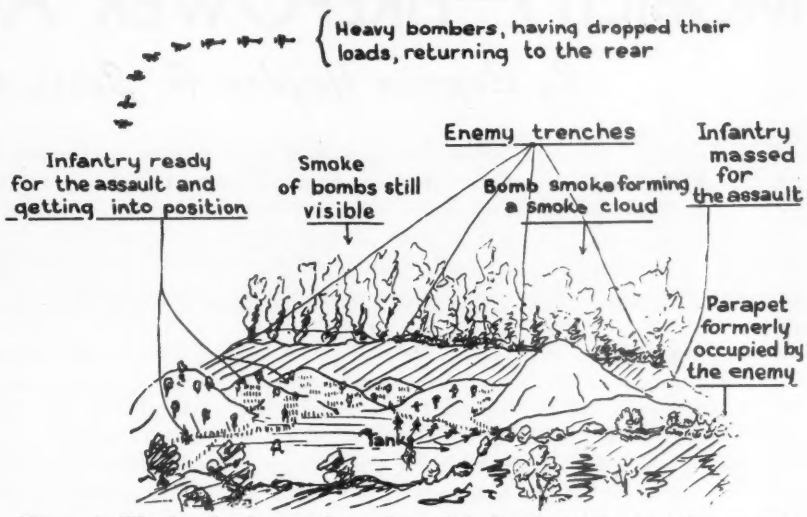
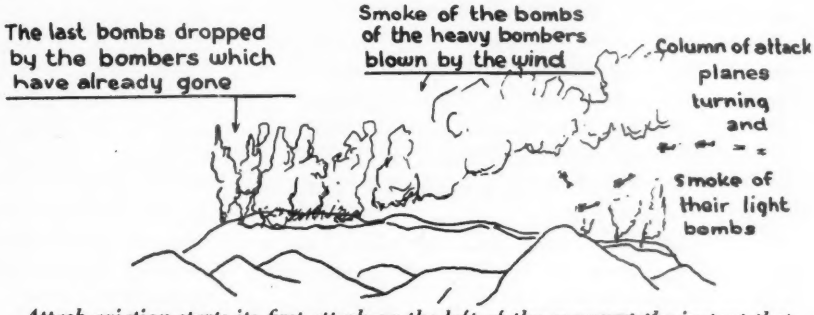

Heavy bombers, having dropped their loads, returning to the rear
Enemy trenches
Infantry massed for the assault
Infantry ready for the assault and getting into position
Smoke of bombs still visible
Bomb smoke forming a smoke cloud
Parapet formerly occupied by the enemy
Tanks

Figure 3: The bombardment planes drop their bombs while the infantry and tanks get into their jump off positions.


The last bombs dropped by the bombers which have already gone
Smoke of the bombs of the heavy bombers blown by the wind
Column of attack planes turning and
Smoke of their light bombs

Attack aviation starts its first attack on the left of the enemy at the instant that the last bombs of the heavy bombers fall on the right.

NOTE: Preparation of an offensive against government trenches in the Spanish Civil War.

(Sketched by Brigadier General Reilly, USA, an eye witness, on a battlefield to the east of Teruel.)

"First came an artillery preparation then an aerial attack by bombardment planes, immediately followed by another bombardment by attack aviation, aided by their machine guns and power dives. During this phase the tanks and infantry occupied their jump off positions. The bombers and attack ships repeated their attacks several times. At the moment that the attack planes finished their last attack, the tanks, in a single line, followed by the infantry in a formation of small columns, began the assault."

Several months later the cars still remained in the spots where they had been disabled. You could still see the half-burned bodies which the sun and air of Spain seemed to mummify rather than decompose.

Ever since, except for minor sorties and those attacks well supported by infantry and artillery, the tanks stayed out of range of the 37-mm. guns, and carefully avoided too close contact with the Nationalist infantry. They have taken advantage of the longer range of their cannons to put these 37-mm. guns out of action and of their great mobility to avoid becoming an ideal target for the 45-mm. mountain guns.

The Nationalists themselves always use their cars to assist the assault of the infantry. First comes the artillery preparation, and then the aviation gets a crack. (See Figure 3.) Then, in several lines, but well-spaced, come the combat cars, followed by infantry. If there is a sufficiency of tanks mounting cannon, only they are used, or the numbers are split half and half with light tanks, but these latter are used only to cover the flanks of the normal attack formation. The infantry follows immediately after the tanks. This method of fighting, which has been proven by two and a half years of war, shows that if infantry is to be always the "Queen of Battle" she has still, to repeat my first metaphor, two princes consort: the artillery and the combat car.

MOBILITY—FIREPOWER AND SHOCK

By Captain Hayden A. Sears, Cavalry

The division of any organization into several or any number of parts does not imply that there must exist therein a lack of cohesion. We find our country divided into forty-eight states, no single one of which could stand by itself. Taken together, these same forty-eight states form, however, the United States, a potent world power. In the Army we have branches, and it is on the judicious blending of the performance each is capable of giving that a successful military operation is conceived and constructed. So we come to the two elements of cavalry—horse and mechanized—which together make up Cavalry as it is known to our army today. Let us at the start get it clearly in our minds that we have in both these elements cavalrymen and cavalrymen only. To attempt to delineate by saying a "horse" cavalryman or a "mechanized" cavalryman is, under our present War Department directives, presumptuous to say the least.

Throughout the ages, the masters of the art of war have recognized the vital rôle of cavalry in the army combat team. Napoleon once remarked: "There is no end to what I could do with the help of good cavalry." And again after the battles of Lutzen and Bauten, where he lacked cavalry, he said: "With enough good cavalry, I could have changed the map of Europe."

In our own day, Marshal Foch has said, "The next war will begin where the last war ended—with movement." General Pershing has stated, "Cavalry is as important today as it has ever been." And our present Chief of Cavalry, in his "Greetings to all Cavalrymen" on the occasion of his assuming his duties as Chief, wrote: "We must never forget that basically our mobility centers around the horse, whether it be the iron horse or the horse of flesh and blood. . . . There is no difference between the horse and mechanized cavalry except that caused by the respective qualities of their mounts."

In the *Cavalry Field Manual* we find cavalry defined as "That combatant arm of the army organized primarily to perform those missions of ground warfare that require great strategical or tactical mobility combined with firepower and shock." Its characteristics are listed as those of mobility, firepower, and shock. To these characteristics we add in the case of mechanized cavalry "protection"—i.e., the protection afforded to personnel by armor.

As to mobility, I quote again from the Chief of Cavalry: "Under its own power, it (mechanized cavalry) has the same strategic mobility as have other troops moved by motor. It is more vulnerable on the march to surprise attack than is horse cavalry. . . . The horse is quite mobile under his own power, marches of 100 miles in 24 hours or 150 miles in 48 hours being within the capacity of hardened troops. The ability of horse cavalry to go cross-country in scattered formation reduces its vulnerability on the march." As an example of this horse cavalry strategic mobility, the actual operations of the Second French Cavalry Corps in 1918 may be cited. Covering 65 miles the first day and 46 miles the second—a total of 101 miles in the zone of operations in two days—it arrived April 14th on the battlefield in Flanders and from April 15th to 30th stopped the advance of the Germans in that area. Again on May 27th—less than a month later—when the Germans attacked, this same cavalry corps marched over 125 miles in three days to the Ourcq. In spite of superior enemy forces, and the almost complete rout of their own infantry, this cavalry corps was able to stop the offensive until the arrival and formation of the infantry reinforcements.

Mechanized cavalry has no such historical examples to offer. War, and war alone, can prove whether or not this new weapon of cavalry is suited to perform cavalry missions. Lack of dependability of its iron mounts is frequently brought to the forefront of argument as an obstacle yet to be overcome in the use of mechanization. I have only to refer you to the magnificent maintenance record of the 7th Cavalry Brigade during its 700-mile march of last spring from Fort Knox, Kentucky, to Fort Oglethorpe, Georgia, and return; or its 800-mile march from Fort Knox to Fort Riley, Kansas. This march to Kansas, followed by one month's participation in maneuvers, and another 800-mile march back to its home station, shows clearly that this alleged disability has been entirely overcome.

Taking Paris, France, as the center of a circle, and a radius the length of these marches, we would, if we travelled to the east, traverse a third of the way across France, clear across Germany, and into Poland within 50 to 100 miles of Warsaw. Marching to the southeast, one would traverse half of France, across Germany—including all of former Austria—to Budapest, on the Danube, the capital of Hungary, or into Italy south past Rome to Naples. Or if we happened to get off toward the southwest, we would go beyond Madrid, or by altering our course, after going south of the Bay of Biscay, we could make northern Portugal.

The necessity of fuel supply is frequently advanced as a detrimental factor in the employment of mechanization. The armored cars and personnel carriers now used have a capacity of sustained operation of about 250 to 300 miles, trucks of the trains about 200 miles, and combat cars about 140 miles. Diesel experiments now being worked out show that a range of 250 miles for combat cars is entirely practical. Another alleged objection disposed of through experience and intelligent practical experimentation.

The razzle-dazzle and glamour of mechanization, and the extravagant claims made for it, are for the most part attributable directly to those enthusiasts who were but briefly, if at all, exposed to the aggravations and disappointments involved in its earlier operations.

Artillery in position supporting Cavalry action.

Here then mechanized cavalry possesses its *first cavalry characteristic*—MOBILITY.

Let us, for the moment, turn back the pages of time and see what ancestors the idea of mechanized cavalry had. In past ages, we are told, men, by mounting skins on a rolling framework, attempted to armor themselves. Possibly the Horse of Troy is another predecessor, for certain it is that it achieved surprise and results similar to those of the tank employed on the Western Front. In 1482 Leonardo da Vinci invented a kind of a tank (covered chariot), while in the same century the Scots used a wooden war cart enclosing both the motive power (two horses) and the crew within wooden armor. For the Crimea (1854) a tank was designed, but it was abandoned as being too barbarous. A practical caterpillar design to be driven by steam was made in 1888, and a trial machine even constructed. In 1908 a track vehicle was constructed and viewed by the British Staff, which turned it down. In 1913 and again in 1915 the Germans turned down armored caterpillar vehicles demonstrated to them. On the Somme front north of Pozieres on September 15, 1916, an armored cross-country vehicle—the tank we know today—first went into action. Previous attempts through many centuries to give man an armored fighting vehicle had been doomed to defeat because of failure of the motive power. Not until the advent of the gasoline engine did the armored fighting vehicle become practical. The tanks of 1914 worked. Here then we see a definite trend to mechanization in armies as we know it today. Next, auxiliary weapons had to be developed and speed added.

This has now been done, and the mechanized cavalry of our Army represents the American idea of a balanced mechanized force. The unit of mechanization is a balanced unit composed of four combat elements. These are: (1) a reconnaissance element—the armored or scout car; (2) the fire support element—machine guns and attached artillery; (3) the element for the neutralization of hostile antimechanization weapons — the mortar, throwing smoke; and (4) the striking power of the unit, the combat-car element. This last is the element envisioned for centuries, which arrived in battle in the fall of 1916 and is the backbone of any mechanized organization for which all other elements function in order to aid in securing its satisfactory and successful employment. It is the World War tank of 1917, with cavalry speed and mobility.

Briefly we may now compare the organization of a horse regiment and that of a mechanized regiment. The horse regiment consists of Regimental Headquarters and Band, Headquarters and Service Troop, Machine Gun Troop, Special Weapons Troop, and three squadrons, each consisting of a squadron headquarters and three rifle troops (W).

The mechanized regiment consist of a Headquarters, Headquarters Troop, Service Troop, Machine Gun Troop, Armored Car Troop, and two combat-car squadrons of a squadron headquarters and two troops each.

Totals in personnel and weapons are as follows:

	Horse	*Mechanized*
Personnel	1,761	798
Rifles	1,013	40
MG (Lt.) .30	86	302 (AA141)
MG (Hvy.) .30	12	...
MG (HB) .50	23	93
Sub MG .45	11	127
Mortars 60-mm.	4	...
Mortars 3.2	...	6

Clearly here is our *second cavalry characteristic*—FIRE-POWER.

From the foregoing we perceive at once that there is a decided organizational difference between these two elements of cavalry. Taking the combat troops only into consideration, we have in the horse regiment 138 squads of all sorts, 108 of which (rifle troops) are capable of subdivision into half squads (216), or 81 of which are capable of subdivision into sets of twos (324), should occasion demand it. If we now turn to the mechanized regiment, taking again only the combat troops, we find 99 combat vehicles, including mortar mounts and machine-gun carriers, which means 99 crews (squads) capable of no further subdivision. It is therefore apparent that by the very virtue of its organization, a mechanized regiment cannot be dissipated except through vehicular loss. Through the very fundamentals of organization, mechanized cavalry builds the basis of SHOCK—its *third cavalry characteristic*.

The fourth characteristic, pertaining only to mechanization, that of armored protection to the crews, needs no further mention.

A difference which we must consider in any treatment of mechanized cavalry is the difference in ability, insofar as it pertains to rate of march and endurance, between it and the horse cavalry, which leads to a decided variation in time and space factors. As a simple example of this difference, let us take horse cavalry marching at 5 m.p.h. and mechanized cavalry marching at 25 m.p.h. It is obvious that in one hour of marching the mechanized unit is going five times as far as the horse unit. Taking then this ratio of 1:5 in space, and converting it to time, we find that the mechanized hour, being to the horse hour in the ratio of 1:5, is 12 minutes long as compared to the horse cavalry hour of 60 minutes. Therefore may we not say that mechanization reduces space by economizing on time?

This time and space difference is, however, largely strategic, and as contact with the enemy becomes more imminent, this difference becomes more nearly equal from a tactical point of view.

The terrain sensitiveness of mechanization must not be forgotten. It is obvious that horse cavalry can cross a deep canyon by use of narrow single-track trails, and it is equally obvious that mechanized cavalry cannot cross the same canyon by these same trails. However, with its mobility, mechanized cavalry can go around this obstacle on a march too fatiguing to be contemplated by horse cavalry, reach the other side, and lend valuable coöperation to the horse unit should it encounter opposition.

Any mission assigned mechanized cavalry must warrant the expense involved. This expense is not measured in dollars and cents. It is measured in supplies expended, wear and tear on vehicles and crews, and maintenance involved. Mechanized cavalry is a weapon of opportunity, expensive of operation, difficult of replacement, capable of achieving maximum results only when judiciously employed.

During the Third Battle of Ypres in October of 1917, we find in a subaltern's notebook the following paragraph: "It infuriated me to see valuable lives and machinery risked in this unimportant work for which tanks were quite unsuitable. When correctly used, they would, I felt sure, prove their real worth. It seemed contrary to common sense, to continue such waste." And twenty-two years later we must recognize those words as still being truth.

From a section leader's diary, we quote again, after the Battle of Cambrai on November 21 and 22, 1918: "When the gate to Cambrai had been ours, the opportunity had not been utilized. If the cavalry had gone into the breach made by the tanks, and followed up the enemy along the Fontaine-Cambrai highroad, it was my opinion that Cambrai would have fallen." German official reports confirm this man's view. I quote: "The English command omitted on the afternoon of November 21st to continue its attack against Cambrai, and it failed to recognize and utilize the possibility of enlarging its achieved success by advancing in a northerly direction through the gap existing to the east of Bourlon Forest. It did not even employ its cavalry, and its reconnoitering patrols also did not appear." Clearly an opportunity lost, due to lack of appreciation of a new weapon and failure to cooperate therewith. One must understand something of the use of the tools available when one sets out to do a given job.

With proper timing, mechanized cavalry can be delivered at any scene of operations at the proper time to cooperate in the action and perform its assigned part. It can take ground, but it cannot hold it. Again I quote: "If the infantry failed to turn up, what orders should I give? Tanks could attack and capture a position, but they could not hold it." And again: "Tanks had entered the village and moved along the streets. Now, however, it was to be shown that tanks can win terrain, but cannot hold it if they are left to their own resources. The tanks lacked the field of fire in narrow streets, and they were hemmed in in their movements from every direction."

In February of 1937 in Spain, employment of a tank mass was made on one occasion which resulted in an advance of 50 kilometers, demonstrating that a tank mass used for surprise purposes was an excellent offensive weapon, capable of obtaining quick and brilliant success. However, supporting troops could not keep up with this advance, and the mass was driven back 30 kilometers, thus as clearly demonstrating that their ability to hold ground was nil. Mechanized cavalry can and does attack, it can deny hostile troops access to terrain, but it cannot hold terrain. Its mission accomplished, it returns from whence it came, refits, and is prepared for its next assignment.

It is too early for us to see clearly or to evaluate properly recent-day employment of mechanized units in either Spain or Japan. We know that in Jehol mud and again at Nankou Pass in 1937, the Japanese bogged down. We know also that in Spain Italian troops at Guadalajara in trucks and light tanks, confined to a road because of rain and mud, got nicely bombed. Can anybody say, however, that employment of mechanization under such conditions was either justified or warranted? Did not Napoleon's cavalry charge into a sunken road at Waterloo, June 18, 1815, and did not Lord Cardigan's Light Brigade at the battle of Balaclava, 25 October, 1854, charge up a valley, losing 478 out of 673 men? Can anybody say that in these cases horse cavalry was properly employed? But did these disasters, or Custer's Massacre, condemn horse cavalry? Certainly not. It is by the study of disasters such as these, as well as by the study of successful operations, that the art of leading horse cavalry and properly employing it has been advanced to its present state. It is to be hoped that the study of mechanized reverses may point the way to the development of an employment of American mechanized cavalry which will under battle conditions prove correct and accomplish successes that future generations may study and from which they may profit.

It is curious to note that what serves as a defense against

mechanized cavalry—antitank guns or land mines —is no defense against horse cavalry. On the other hand, the greatest enemies of horse cavalry—barbed wire and emplaced machine guns—are practically useless when used against mechanized vehicles. A perusal of this thought suggests that it is almost as impossible for combat cars and armored cars wholly to replace horse cavalry as it is for horse cavalry to do the work of combat cars and armored cars.

In no way should we permit ourselves to become blinded by the immense mechanized developments in Europe to realities as they exist for us today. Our case is not similar. In Germany, in England, in France and in Italy there is a dearth of horses and draft animals. Their problem is different and can only be solved by using mechanization and motorization to supplement their animal supply. Poland and Russia possess horses as well as the land on which to forage them, and although we find ample mechanization in their armies, we also find that they envision a large place for the employment of horse cavalry in any operations they may be forced to undertake, and that they have not gone to the lengths in mechanization to which other governments have been forced to go.

Here in the United States we have a large supply of both riding and draft animals, and we shall doubtless need them. But we shall also need an adequate mechanized cavalry, capable of operating on independent missions or in coöperation with horse cavalry, and we shall need men trained in its employment and operation. In the words of General Harbord: "Modern equipment is necessary to win a modern engagement, but there must be men of stamina there who know how to use it to fullest advantage."

With the idea in view of coöperation of horse and mechanized cavalry, maneuvers were held last fall at Fort Riley. The 7th Cavalry Brigade (Mecz), the only self-sustained mechanized cavalry unit of the army, marched, as I have mentioned, from Fort Knox, Kentucky, to Fort Riley, Kansas. For a period of one month extensive exercises requiring the coöperation of horse and mechanized cavalry were held. The results were profitable and enlightening, and the lessons learned may be briefly summed up as follows:

"1. The tactical characteristics of horse and mechanized cavalry are largely complementary. Therefore their combined employment against a common objective, if and when the situation permits, is usually more effective than the employment of either type alone.

2. Horse cavalry, by virtue of its unexcelled cross-country mobility, is able to furnish close support to mechanized cavalry on the battlefield whenever the situation permits or suggests combined operations.

3. The strategical mobility of mechanized cavalry enables it to afford opportune assistance to distant horse cavalry in spite of their initial wide separation. The tactical mobility and combat power of mechanized cavalry are valuable adjuncts to horse cavalry in the performance of its battlefield missions.

Cavalry Scout Car on distant reconnaissance. Note camouflage and local security measures.

4. The strategical mobility of mechanized cavalry greatly exceeds that of horse cavalry, but their tactical mobility is more nearly comparable (or equal), being dependent largely on the obstacles of terrain to which mechanized cavalry is relatively more sensitive.

5. Daylight reconnaissance is effectively accomplished by mechanized cavalry, but under most circumstances horse cavalry is more suitable for night reconnaissance, and close-in battle reconnaissance.

6. The whole matter of cavalry communications needs a thorough study from the ground up, with a view to simplification, coördination, and other improvements.

7. Control of a mechanized cavalry unit the size of a brigade with the present facilities for command and communications is a difficult problem, and indicates that no material increase in the number of organic units under one command should be attempted until adequate means and ability to control them have been tested and proven.

8. The machine-gun fire support within the mechanized brigade is inadequate, due primarily to the limited range and limited fire power of the light machine gun. It is believed this could be improved by the substitution of the heavy machine gun for the light machine gun.

9. In order to obtain the maximum combat effectiveness of cavalry as a whole, it is essential that the two types of cavalry—horse and mechanized—be able to train together continuously."

The mechanized cavalry brigade consists of a Brigade Headquarters and Headquarters Troop and two cavalry regiments, mechanized. The mechanized brigade will normally be reinforced with the following units:

Battalion of 75-mm. howitzers (mechanized)
Engineer troop (mechanized)
Maintenance troop (mechanized)
Medical troop (mechanized).

The headquarters and headquarters troop include elements for the command control, administration and tactical employment of the brigade and reinforcing units.

The reinforcing units provide the brigade with the necessary elements for the fire support, maintenance, movement and evacuation of the brigade.

The regiment is organized so as to provide elements for the performance of four major tactical functions. First,

the armored-car troop for reconnaissance missions; second, the machine-gun troop for local fire support missions; third, the mortar platoon for the mission of neutralization of the hostile anti-mechanization weapons; fourth, the combat-car elements for the mission of furnishing shock, crushing power, and fire power. Attached artillery may furnish additional fire support. All these elements coöperate to support and drive home the combat-car attack. In addition to the tactical missions, the regiment is organized so as to provide a highly mobile and efficient system of administration, control, communications, maintenance and supply.

It may be said, also, that the organization of the mechanized regiment is developed around the combat-car units. In addition to the combat-car units, for purposes of adding fire power, necessary reconnaissance elements, command and staff administration functions as well as maintenance, the regiment has an armored-car troop, a machine-gun troop, regimental headquarters and headquarters troop and service troop. These will be discussed in that order in the following paragraphs.

The combat-car troop has four combat-car platoons and a troop headquarters. It is assigned a zone of action or objectives and attacks with one or more platoons in the fighting line and one or more platoons in support, or occasionally in column of platoons echeloned. It is maneuvered and controlled in a manner similar to that used in the horse cavalry troop. In addition it has radio and disk or flag signal communication to its platoons and higher commanders.

The troop, or units thereof, with or without machine-gun and rifle elements, attached, constitutes the close-in security elements (advance guards, rear guards, etc.) for the larger mechanized forces.

The combat-car fits into the regimental combat team in the same manner as the horse cavalry squadron functions in the regimental horse cavalry combat team.

Reconnaissance of roads, terrain and hostile forces is made by the armored-car troop or its elements, with or without coöperation from air service. The armored-car troop, or elements thereof, usually precede the regiment from one to two hours' distance on reconnaissance. They may be assigned a route, zone or locality to reconnoiter. Definite missions are assigned. Where the reconnaissance mission is directed towards a hostile force, the armored-car platoons seek to gain and maintain contact. When contact is made by the regiment, the armored-car platoons continue reconnaissance and cover the flanks and rear of the regiment.

An armored-car troop can reconnoiter satisfactorily a zone not to exceed 20-25 miles in width. A platoon can reconnoiter a zone of six miles in width.

When the entire troop is used for reconnaissance, it operates in a manner similar to that prescribed for a horse cavalry detachment; the troop less three platoons moves along the axis of advance of the regiment, while the platoons patrol on parallel roads covering the zone.

Efficient reconnaissance is dependent on a suitable road net. In many situations a platoon may operate by section for a few miles. However, information to be of value must be promptly transmitted. Therefore a platoon operating by section should have previously designated assembly points.

The detachment and patrols move by bounds, halting under cover for frequent observation of localities, and often for dismounted reconnaissance.

In combat, any armored-car elements retained with the main body are usually with the reserve employed in counterattacks and on security missions.

The principal mission for armored-car elements is reconnaissance. In many situations reconnaissance and security are combined. The regimental commander may employ the entire troop or only a part of it. It depends on the enemy situation, the zone to be reconnoitered, the duration of mission. The armored car has a fuel capacity for 300 miles on road under normal weather conditions. An armored-car platoon on a reconnaissance mission is usually deployed in depth over a distance of between 800 and 2,000 yards.

The armored-car platoon consists of one officer and fourteen men, one attached radio operator from headquarters troop. It is organized into two sections, each of two cars. It is maneuvered and controlled by section, with radio, visual signals, or an attached motorcycle messenger. Sections are never broken up for tactical operations. Its formations are simple, consisting of line, column and echelon, in normal, close, and extended order. It attacks by fire only and seeks concealed positions. Each car is equipped with one caliber .50 and two caliber .30 machine guns, one of which is mounted for antiaircraft defense, and one sub-machine gun. The car crew consists of the car commander, gunner, assistant gunner, and driver.

The machine-gun troop furnishes the fire support for the attack by combat-car units, and also holds ground gained by the combat cars and covers by fire, if necessary, their assembly. They may be attached by platoon to the maneuvering force, if the scheme of maneuver is a wide envelopment, or remain under regimental control. In either case, a part of the machine-gun troop is prepared to move forward in support of combat-car units. A portion of the machine guns is always in the secondary attack. In defense, the machine-gun troop constitutes the main ground holding element of the regiment. The machine-gun troop, less one or two platoons, usually constitutes the march security element for the regiment at night.

The machine-gun platoon is comprised of one officer and 35 men transported in five personnel carriers, and is divided into two sections of two squads each, the extra carrier being the command car.

The machine-gun squad consists of seven men and can employ two ground caliber .30 or one caliber .50 machine gun. The machine-gun section consists of two squads and may employ four caliber .30 machine guns or two caliber .50 machine guns.

The platoon may employ eight caliber .30 or four caliber .50 machine guns, or a combination of each.

In dismounted combat the squads of a section are seldom separated more than 100 yards or sections of a platoon more than 200 yards.

Each personnel carrier is equipped with a light machine gun mounted on the cowl, for vehicle, ground and anti-aircraft defense. Personnel carriers are retained as close to the dismounted section and platoon as cover will permit, like led horses.

The rifle platoon, employed by squads and sections, furnishes fire support and ground protection for combat-car units and machine-gun elements. Rifle platoon elements act as covering detachments for machine-gun platoons moving to a position captured or overrun by the combat-car attack, mop up the position, take over prisoners and provide flank security for the machine-gun-troop elements. They also furnish dismounted combat patrols in offensive and defensive situations. Rifle platoon elements are invaluable at night for use with security elements, including advance guards and outposts.

The regimental headquarters troop is divided into platoons that furnish the administrative control, communcations, and a means of denying the enemy effective use of his anti-mechanization weapons. It has three officers and 105 men, and is composed of a troop headquarters, staff platoon, communications platoon and mortar platoon. The organization into platoons is for administrative and training purposes only. Their tactical and administrative functions cause the personnel to be distributed throughout the regiment.

The mortar platoon neutralizes hostile anti-mechanization weapons, primarily by the use of smoke. Tactically it operates independently, being placed in the headquarters troop for administration and supply. It normally functions under the direct orders of the regimental commander. It occupies defilade positions in rear of or to a flank of the supporting machine-gun elements. It fires smoke and HE shell, phosphorous and gas, and has a maximum effective range of 2,400 yards. It consists of three sections of two mortar mounts each.

The platoon is equipped with radio and radio telephone for direct communication with the observation post. It is very mobile, both in going into and out of action, and its fire is flexible without a change of position.

The communications platoon, under the communications and signal officer, functions in the forward echelon regimental headquarters, forward and rear echelon headquarters troop and operates 29 radio sets throughout the regiment in all organizations except the set in each section leader's car of the armored-car platoons.

All members of this platoon, including drivers and motorcyclists, are instructed in signal communications, thereby furnishing relief for drivers and operators within the vehicles of the forward echelon. All radio equipment and personnel to operate and maintain it are contained in the communications platoon. Radio sets are installed in the command vehicles of different units under the supervision of the signal officer.

The service troop contains elements which obtain and transport supplies, furnish maintenance for the vehicles of the regiment, and provide for evacuation of vehicular casualties.

From February 5 to 21, 1937, there raged in Spain what General Weygand, Foch's one-time Chief of Staff, said was "the most perfectly conceived and brilliantly executed battle of the Civil War up to that time." This was the battle of the Alfambra, resulting in the Insurgent capture of Teruel, in which "a spectacular part was played by Monasterio's cavalry, which contributed greatly to the victory by the speed and decision of its movements."

"The attack was preceded by an artillery and an aerial preparation unparalleled in intensity in the Spanish war. . . . Then the shock troops advance, *tanks leading*, in coördination with the infantry, artillery and aviation. . . . The government line gave way. . . . Through this gap came with lightning-like speed the mass of maneuver —Monasterio's Cavalry Division."

* * *

On March 9, 1938, thirteen months later, we find Monasterio's Cavalry Division again in operation. . . . "This cavalry division had been completely reorganized after the battle of the Alfambra, and now included motorized infantry and *detachments of armored cars and tanks.*"

Might we not say that here is the cavalry of today, as proven on the battlefields of Spain? Does it not combine horse, mechanized and even motorized elements into an effective whole, which drove through a gap, cutting off lines of communication and harassing the hostile forces in flank and rear, and which was officially commended for its "rapid and masterly advance"?

In closing I would summarize as follows:

(1) Mechanized cavalry is a modern development possessing the cavalry characteristics of mobility, fire power, and shock, plus armored protection.

(2) Mechanized cavalry is not a replacement of horse cavalry but may coöperate with it or act independently.

(3) Mechanized cavalry must be assigned appropriate missions and given latitude in performing them.

(4) Mechanized cavalry has its limitations, as has any other combatant arm. Exceed these limits and you court disaster.

(5) General Harbord: "Modern equipment is necessary to win a modern engagement, but there must be men of stamina there who know how to use it to fullest advantage."

Horses in Japan

NOTE: The following was taken from the April, 1939, edition of the *Tokyo Gazette,* Tokyo, Japan. The *Tokyo Gazette* is a monthly report of current policies, official statements, and statistics of the Japanese Government:

Many things hitherto unnoticed even by the thinking public have been brought to light, frequently with new emphasis and implications, through experiences undergone on the China and home fronts in connection with the present conflict. The usefulness of the horse in modern warfare is one of such discoveries. In reality, without the services of this dumb, faithful animal, Japanese troops would not have been able to carry out successfully, daring attacks upon enemy positions, particularly in battles on the rugged steeps and in the narrow passes of the Chinese mountains. Contrary to popular expectations, the increasing mechanization of the Army has by no means diminished the utility of army horses. The present hostilities have certainly established their distinct place in modern warfare. Accordingly, a new horse administration policy for Japan and Manchoukuo inclusive has been worked out, while the Second Horse Administration Plan already in force for Japan has been revised. In the following are given outlines of the two Plans.

The Japanese-Manchoukuoan Policy

In view of the prevailing international situation and conditions of resources in horses in Japan proper, overseas territories and Manchoukuo, the program applied only for Japan proper has proved far from adequate for meeting the urgent and growing demands both for army horses to be used on the Asiatic Continent and for horses to be used in connection with industries at home.

Many seem to believe that Manchurian horses are superior to Japanese horses, but the actual case is to the contrary. Japanese horses, though by no means perfect, have been greatly developed in quality by years of endeavor; their abilities are far superior to unimproved Manchurian horses. The latter, and Chinese horses too, have been used in various services on the Chinese front and have been found slow in pace, lacking in strength, and useful only as draught horses for baggage. Their power to pull and to bear represents approximately two-thirds of that of Japanese horses. Hence, what is needed is establishment of a horse administration policy for Japan proper, overseas territories and Manchoukuo, inclusive, by which the overseas territories and Manchoukuo can be aided with Japan's superior technique of horse breeding and stallion resources, and by which horses of Japanese breed can be sent to districts according to needs and with a view to effecting adjustment in distribution of suitable types of horses. On the basis of such consideration, the Horse Administration Policy for Japan and Manchoukuo, inclusive, has been approved, as far as the Japanese end of the procedure is concerned, by the Japanese Cabinet Council on July 12, 1938.

Its essential points are as follows:

1. In Japan proper, the supply of competent horses required by the Army, particularly by battle-line troops, shall be the main objective of the measure. Therefore, the steps for the improvement of qualities of horses to be held within the islands and for their preservation through the increase of their breeding fruitfulness shall be taken first of all. However, positive assistance in promoting the cultivation and improvement of army horse resources in overseas territories and Manchoukuo shall be rendered at the same time.

2. In overseas territories, the main objective shall be to supply speedily the number of horses required by the Army. For this purpose the immediate step of sending Japanese horses there shall be taken followed by steps to replete their horse resources gradually by careful breeding.

3. In Manchoukuo, the main objective shall be to create an abundant supply of competent small-statured horses required by the Army. In order to gain this objective, their improvement by stallions of Manchoukuoan and Japanese breed shall speedily be effected. Steps for the increase of breeding and for the importation of as many competent horses of Japanese breed as possible to Japanese settlements and other necessary places shall also be taken.

The Plan for Japan Proper

The difference between the *Second* Horse Administration Plan and the newly revised one lies in this: while the former had as its objective the repletion and competent

Japanese cavalry patrol examines papers of travelling Chinese. Note use of Manchurian ponies.

Japanese supply column in undeveloped country. War as she is fought!

riding and draught horses, the latter has as its main objective competent horses necessary for battle-line troops, in other words, the supply of riding, draught and pack horses for use in battle lines. Accordingly, the revised plan aims at the extension of the scope of horses to be required for battle-line troops and the improvement of the quality of horses to be held in Japan proper, which involves the carrying out of the thoroughgoing augmentation of the post-breeding protective measures as well as the increase of their successful breeding. No term is fixed to this plan, as it may be required to make further and partial revisions according to possible changes in the state of affairs concerned and to actual results of the operation of the present plan. However, the term fixed for the former plan, extending over 7 years from 1939-45, has been made the basis of the immediate program. Its essential points are explained below.

Essential Points of the Revised Plan

1. Horses of Military Age to be Held in Japan Proper. Endeavors for the preservation of 1,500,000 head shall be conducted as hitherto, and increase in the breeding of Japanese horses shall be planned in order to give positive aid to overseas territories and Manchoukuo in the cultivation of army-horse resources and in the improvement of the quality of horses. As for horses of military age—from 5 to 17 years of age—to be held in the main Islands, their number must at least be 1,000,000 head.

2. Improvement of the Quality of Horses.

Necessity for the improvement of the quality of horses to be held in Japan Proper has been keenly felt through the experience of the present conflict with China. In the horse administration policy hitherto carried out emphasis was placed on breeding. The present affair, however, has taught the urgency of enlarging and strengthening post-breeding measures.

An important matter to be taken account of in this connection is the impossibility of importing horses from abroad, a measure which was carried out during the Russo-Japanese War to great advantage. Thus Japan depends entirely on the internal resources for supply of Army horses. Consequently, organizations for preparatory training of horses for use in the Army have been set up since March, 1937, with a view speedily to carry on measures

for training and hygienic protection—including the protection of hoofs—of horses likely to be requisitioned. These measures have been seriously and successfully carried out. Horses trained in this way before being requisitioned have not only shown by far the better records as army horses as compared with those not undergone such training, but also been contributing to the maintenance of the nation's productive power as industrial horses when not requisitioned. Their growth in strength has prevented them in a large measure, from getting exhausted easily, thereby making up deficiencies in labor power caused by numerous cases of requisition. These emergency measures will be made permanent in connection with the present program and strengthened and extended in their methods and scope of application.

Returning to the main point, essentials of the measures for improving horses to be held in Japan proper can roughly be summarized as: (1) to enlarge and perfect pastures and other grazing facilities; (2) to strengthen measures for improving the methods of rearing horses by carrying out thoroughgoing hygienic facilities and measures; and (3) to complete measures for their training. As for colts which are to be successors of army horses, a special legislative measure, the Law for Protection of Army-Horse Resources, has been enacted providing for the system of protected army-horses and for subsidies to be granted to those who are rearing them. The animals are thus to be carefully reared and also trained. With regard to fully grown horses coming within the purview of this system, special training for qualifying them as army horses is to be given. Such a measure as the training contest is to be adopted also for purposes both of training and popularizing the idea of protected horses. This measure, superseding as it does the local horse-racing regulations, will serve as the means of improving local horse racing systems, a step long in demand.

3. Adjustment of Distribution of Horse Resources.

In coördination and close coöperation with horse administration policies in overseas territories and Manchoukuo, positive aid shall be given to the cultivation and improvement of horse resources there.

4. Improvement in and through Breeding.

Utilizing breeding mares and the breeding technique most effectively, endeavors shall be made for the fruitful breeding of horses necessary for aiding overseas territories and Manchoukuo in this matter while adequately preserving horse resources in Japan proper.

In carrying out the new breeding policy the first objective should be to breed the short- and broad-statured and strong-limbed horses with the draught and endurance power and which are not only covenient for middle-statured persons to drive and use but also easy for rearing. On the other hand, the breeding of horses of the riding type should be restricted in number on the basis of the peacetime demand of the Army. The breeding of delicate, lean horses, particularly of excessively high-spirited ones is to be guarded against. Briefly, the main objective of the present revision in breeding policy is to try to breed service horses for defense purposes.

Another important measure in improving horses through breeding is to establish breeding policies by regions and classes of service according to the actual conditions of different localities and, at the same time, to try to produce competent horses having abilities fit for different classes of service by carefully selecting breeding horses, by regulating their distribution and mating, and by adjusting and readjusting blood and physical types.

With regard to classes of service, four classes of riding, draughting, small-statured draughting, heavy draughting have been adopted as in the former plan. With regard to breeds and types of horses, the new plan has made such revisions as necessary for achieving the above-mentioned purposes. Important steps worthy of special mention here are the creation of the system of registering breeding horses and the carrying out of the State ownership of breeding stallions other than those specially permitted for private ownership. The former measure will promote the fixing of the types peculiar to Japan by practicing strict methods of selection of individual horses and the latter will enable the State to own, by 1945, *7,500 head of stallions,* of which 2,000 head will be held and reared directly by the State. By this measure of State ownership, the privately-owned breeding stallions will be eliminated by 1945. However, as the repletion of breeding horses for those of the riding type is urgent, those stallions which fall short of the standards in quality and stature, will speedily be eliminated. With regard to mares of superior quality, endeavors will be made for keeping them where they were bred; and at the same time, subsidies will be given to those who rear mares of superior quality. The contemplated Law for Control of Breeding Horses is designed for such repletion and distribution. In this connection, horse races as provided for in the Horse Racing Law have been improved so as to be able to examine abilities of breeding horses necessary for the improvement of horses in general and thus to facilitate the obtaining of breeding horses of superior quality as well as to popularize the knowledge and promote interest in such matters.

These revisions may be regarded as radical changes in the breeding policy. They cannot, however, be expected to bear fruit within a year or two. In purchasing army horses, therefore, the unqualified application of the new principles cannot be made for some years to come. Accordingly, interim arrangements have been made in consultation with the Army for gradually making changes in the purchasing policy in accordance with the forementioned revisions. By 1950, however, all the new measures will be ready for full application even in this connection.

5. Utilization of Horses and Popularization of Knowledge Concerning Them.

In order to maintain and cultivate horse resources, the extension of the scope of utilization of horses and the improvement of the methods of their utilization are extremely exigent. For these purposes necessary measures will be

Japanese troops entering Kupeikow. Note Japanese bred horses.

perfected; in view of experience gained in the present conflict with China, a measure for popularization of the knowledge concerning horses will be carried out.

6. Preparation for the Supply of Army Horses and the Maintenance of Industries in Time of Emergency.

There has never been in Japan anything similar to the plan for mobilization of horses. The present conflict has taught the necessity of some such plan. Accordingly, basic investigations will be made and a systematic plan will be framed for the supply of army horses and for the maintenance of industries in time of emergency. In connection with this plan, it is further contemplated to set up in Japan proper an institution devoted to the study of horses, with a view particularly to making scientific studies necessary for the promotion of horse administration in East Asia.

Advantages, Restrictions and Responsibilities

These plans for improvement of horses will function to no small advantage for those engaging in the horse-breeding industry in that the cost of breeding will be decreased through State-ownership of breeding horses and through the augmentation of measures for protection of mares and in that the prices of horses will be stabilized through the establishment of the protected horse system. On the other hand, however, horse breeders will be placed under restrictions in that they will be required to breed the types of horses in which their particular region is to specialize and may be led to change their breeding policies in accordance with provisions of the new plan.

Those who are rearing and using horses will also gain advantages in having the qualifications of their horses officially recognized, in receiving subsidies accordingly, and in effecting improvement of their horses by means of various governmental measures. They must, however, bear many responsibilities for these privileges. The Government is confident that, with the intelligent understanding of all these people concerned, the new program will be successfully carried out in conformity with national purposes.

A tragic war time convoy

A welcome sight was two small black British destroyers

By Lieutenant Colonel P. F. Gault, O. R. C.

In September, 1918, there sailed from the port of embarkation at New York a large convoy transporting troops for the American Expeditionary Forces. Ten days later, near the end of a rough and tempestuous crossing, two of these ships, the *Otranto* and the *Kashmir,* collided off the Scottish isle of Isley and the *Otranto* sank with heavy loss, including over three hundred United States soldiers.

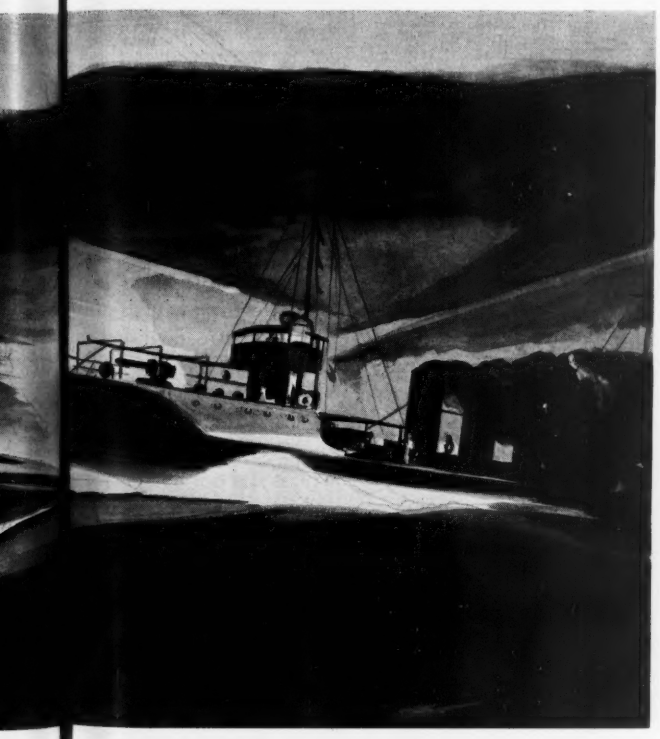
An endeavor will now be made to record the observations and impressions of this voyage as recalled after a lapse of twenty years by one who witnessed the disaster from his post on the S.S. *Saxon,* one of the ships in the convoy.

The convoy was made up of British merchant ships and, it was understood, was under British direction and control. The *Otranto* was the leader and its captain was in command and directed the movements of all the transports. The naval escort to guard the troop ships from hostile attack, as far as an appointed rendezvous with the British forces, was furnished by the United States and consisted of the battleship *Louisiana,* the cruiser *St. Louis,* and a large first line destroyer.

Among other troops aboard the transports was the 59th Field Artillery Brigade, consisting of the 125th Field Artillery, the 126th Field Artillery, and the 127th Field Artillery, the author being an officer of the regiment first

named. The brigade was distributed among three ships, the 125th on the *Saxon,* the 126th on the *Kashmir,* and the 127th on still another. Each ship, in addition to these field artillery regiments, carried other smaller organizations and detachments of casuals. The *Saxon,* moreover, was fortunate in having aboard a number of trained Red Cross nurses, who later on the voyage had the opportunity to and did render service of great value.

The regiments, as National Guard organizations, had served on the border during the Mexican trouble, and had returned to their home stations not long before the outbreak of the World War. After being mustered into Federal service for the emergency they again returned to the border, where at Camp Cody, New Mexico, they became units of the 34th Division.



In the process of reorganization and training numerous vacancies occurred in the commissioned grades, and these were filled from two sources, promotions within the regiment, including the commissioning of noncommissioned officers, and transfer and assignment of officers of the Reserve Corps, largely from Camp Jackson, South Carolina. Those remaining as noncommissioned officers in most instances were the original enlisted personnel, nearly all of whom had had Mexican border experience. While at Camp Cody there had been an infiltration of selective service men, but these did not balance in numbers the draft already made for overseas replacements.

Shortly after the new officers joined the regiment the entire brigade moved to the brigade training center, Fort Sill, Oklahoma. The organizations and individuals profited from the training at Fort Sill, particularly in physical strength and condition. Exercises and maneuvers under the summer Oklahoma sun, interspersed with occasional dust storms and torrential rains hardened the personnel, both enlisted and commissioned. As the period of training drew to a close the condition of the regiment, both as to discipline and health, was excellent. Shortly before leaving for the port of embarkation an increment of selective service men joined the regiment. As a whole these men were of high quality but there was time to do little but instruct them in simple rudiments, and there was of course no opportunity to bring them to the condition, physically or otherwise, of the regiment's original personnel. About this time the regimental surgeon rejoined the regiment. He had been away on detached service, and thus did not have the benefit of the training and conditioning process at Fort Sill.

After a brief stay at Camp Upton, Yaphank, Long Island, where medical examination resulted in the elimination of only a few as physically unfit, the regiment entrained in the dead of night for the port of embarkation and went aboard ship early the next morning.

The *Saxon* was constructed to carry both freight and passengers. Although not a large ship, especially as measured by present-day standards, it seemed well designed and reasonably comfortable. But there was no waste space and after the men were aboard and their equipment stowed, the close quarters proved irksome to the men.

The ship's officers were men of long experience at sea and were understood to be members of the Royal Naval Reserve. Members of the crew, with some exceptions, impressed one as being too young, infirm or otherwise unsuited for the Royal Navy. Some of them took keen delight in entertaining the soldiers with tall tales of the sea. Early in the voyage one of the battery officers chanced to see a number of his country boys grouped around one of the seamen. The soldiers were listening with goggle eyes and long faces, and upon drawing near the officer was surprised to learn that the *Saxon* had never completed a voyage as a transport. Some disaster invariably occurred and all had to abandon ship and either row or swim ashore. Afterwards the ship was pumped out and put back into service. Since most of the rapt listeners had never been on a ship of any kind nor had ever seen a body of water larger than the Mississippi River, such yarns were not reassuring.

As the ship was steaming out to sea it was announced that officers of the regiment were to furnish submarine lookouts who would be in addition to those of the ship's company. Senior battery officers were selected and detailed to this duty. Watches were established and posts assigned. Until relieved shortly before docking at the end of the voyage these officers trained their land-lubber eyes through mil-scale field glasses and swept the tumbling seas in search of submarines.

It was interesting to watch the men as they emerged from the forward hatch and came on deck in the morning. Invariably, the first thing they did was to look for the escort of war ships. After locating them with apparent relief, they directed their attention to the other ships of

the convoy to see whether they were all in position. After this inspection of the convoy and its escort, the men proceeded about their affairs, usually, after the first few days, in search of food.

The ships were assigned positions in the convoy and these were maintained except for an occasional case of lagging. The *Saxon* was on the left flank towards the front. At night no lights were shown. The convoy followed a zig-zag course, which involved, it was said, steaming on certain bearings for a given time and then changing to new bearings, this process being constantly repeated. To those unaccustomed to the sea, such an operation appeared a difficult one, particularly at night, since the ship's officers and men being of the merchant service presumably were not accustomed to handling ships in such maneuvers, and neither the ships nor the machinery had been constructed with that in view.

To the starboard of the *Saxon* and directly abeam steamed another ship of the convoy. As the ships drove through the heavy seas and darkness of the night, the presence of a ship off to the starboard was felt rather than seen. As other ships of the convoy were similarly spaced, in order to fix his relative position, particularly when the sea was rough and the night dark and misty, the ship's officer on watch occasionally would switch on a light, which in turn would be answered in kind by the ship close by. One such incident was followed by the progressive appearance of lights all about. A group of ships were on the course of the convoy, and had it not been for the wish of the officer navigating one of the ships to locate the one nearest to it numerous collisions conceivably might have taken place. The running lights of all these many ships passing in the night made a spectacular sight.

As the convoy proceeded eastward on the North Atlantic it ran into increasingly rough weather and heavy seas, and what was worse, the dreaded influenza made its appearance. Sickness was first observed among the casual detachments. The next cases were found among the recruits who had joined the regiment at Fort Sill. While it was spreading rapidly among those troops, some of the old enlisted men in the regiment, fortunately only a few, were affected.

It was not long before all ordinary hospital facilities were overwhelmed and the public rooms of the ship were made use of in order to take care of the increasing numbers incapacitated by the disease. As a part of the treatment, to obtain the benefits of fresh sea air, some patients were accommodated on deck. This relieved appreciably the pressure on the indoor facilities, both permanent and temporary, but unfortunately this method of taking care of the patients later became increasingly impracticable because of heavy seas breaking over the decks.

The regimental surgeon and his assistants, together with the group of nurses, worked with the sick day and night, and towards the end of the voyage the epidemic had run its course so far as the regiment was concerned.

Late one afternoon rumors from the usual and universal source had it that the convoy was approaching land. The next morning there was no naval escort in sight. During the night the United States warships, pursuant to orders, left the convoy, the arrangement being that the British were from that time on to furnish the armed escort. Because of some mischance, the British warships did not meet the convoy and the troop ships were obliged to proceed all day and into the night without an escort.

Nightfall brought with it a gale and rapidly mounting seas. After the evening submarine watch went on deck the ship was forced to contend with mountainous waves. At one time a heavy sea rolled the ship far to the left. The foremast attracted the attention of the observer, and it seemed that the mast had gone down to the left as far as it could with safety to the ship, and that further downward movement would indicate sure disaster. The mast seemed to hesitate as though balanced between two opposing forces, but finally a heavy sea washed over the ship and the mast went down even further. Then there was a brief lull as the ship struggled to right itself, and, fortunately, the mast started to return to the right and the ship resumed the rolling and pitching to be expected under such conditions.

As the ship rolled a terrific crash in the dining room could be heard, even as far as the boat deck. Although for several days the tables had been equipped with racks to keep the dishes from sliding off, the downward lurch of the ship had hurled against the side of the room dishes, glassware, and about everything else not nailed down.

The extreme roll of the ship and the violent swaying of the mast appeared too much for the nerves of the seaman posted as lookout in the crow's nest, as he was seen to scramble out and scurry down the mast and out of sight.

While all this was going on an officer and two men had a harrowing experience. In moving the body of a recent influenza victim it was necessary to cross the after well deck of the ship. When about halfway across they lost their footing on the heaving deck and were thrown against the rail, and as a result their burden was wrenched from their grasp. As the ship rolled back they were hurled across the deck and against the opposite rail and with them empty containers and light gear which had become unloosed. Then followed a grisly game of hide and seek as they tried to recover what they had been carrying. Although in imminent peril of being floated or washed overboard, their persistence met with success, and eventually they reached the safety of the ship's deck house.

As dawn broke the next morning, a wild scene met the eye. The seas appeared as an unending series of snow-capped mountain ranges. The force of the gale whipped and drove the spray before it as though it were light and swirling snow. The convoy was widely scattered. Some of the ships were not within the range of vision and the few that were to be seen were rolling and pitching among enormous waves.

A welcome sight was the presence of two small black British destroyers which had joined during the night. These boats were tossed about by the waves like chips. Now they were high on the crest, next seen sliding down

into the trough of a wave, where they disappeared from view to reappear on a surging crest.

The *Otranto* and the *Kashmir* were about 1,200 yards ahead of the *Saxon,* wallowing along closely in line, the *Otranto* on the right. Suddenly, as though observing or sensing some danger ahead, they started to turn, the *Otranto* to the left and the *Kashmir* to the right. As this change in direction and the power of the heavy seas were bringing the ships together they seemed to be living things struggling to escape the forces threatening them with disaster. These efforts were of no avail. The ships crashed, the prow of the *Kashmir* striking the side of the *Otranto.*

After the ships struck, the *Otranto's* siren was sounded and continued to blow repeatedly. As wafted back through the misty air and above the noise of wind and waves, the sound of the siren was remindful of the cries of something that still had the desire to cling to life.

Immediately after the collision of the two forward ships, the *Saxon* turned about to the left, as someone said at the time, on a thin dime. When about halfway around a huge sea came over the forward main deck and its force shook the ship from end to end. This wave was the cause of an incident which might have been tragic, but fortunately was only amusing. On the deck at the port rail was a temporary wooden structure housing a galley used in preparing meals for the troops. Green seas came over and through this structure, and there flooded out on the rushing waters, through windows and doors, cooks, kitchen police, cooking utensils, pans, potatoes, and miscellaneous loose gear. Happily the men were able to clutch some firm objects and scramble to safety on deck.

Just as the turn was completed the mists parted momentarily and directly ahead of the *Kashmir* and the *Otranto* a cold, bleak, and forbidding headland came into view.

The *Kashmir* worked clear and backed away from the *Otranto.* No small boats could live in such a gale, but the stricken ship received help from one of the destroyers, which immediately rushed to its aid. Small as this boat was, by skillful and courageous handling it was able to take from the *Otranto* a considerable number of those aboard, who had the opportunity and courage to leap from the rolling and laboring ship to the pitching and heaving deck of the destroyer, a small and uncertain objective at best. A contemporaneous rumor, which has never been verified, was that some men were so unfortunate as to land in the blazing funnels of the smaller boat.

The difficulties of maneuvering this small and narrow ship in the raging North Atlantic so as to save these men must have been enormous. At times it seemed that the destroyer surely would be pitched clear over the masts of the sinking ship. Often the destroyer was thrown back or was forced to back away, but with courageous persistence it would return to save additional lives.

The author felt then, and still feels, that he witnessed a perhaps unique exhibition of valorous and superlatively skillful seamanship.

The *Kashmir* suffered considerable damage and took in a large amount of water as a result of the collision, but was kept afloat by its water-tight bulkheads. After a nerve racking experience for all those aboard, the ship made port at Glasgow under its own steam.

The *Saxon* eventually worked around into quieter waters, and at sundown that evening a sad but impressive ceremony was witnessed. Several men of the regiment, recent victims of influenza, all recruits received at Fort Sill were buried at sea. Officers and men so far as available were assembled on deck. A prayer was said by the regimental chaplain. The ship's executive officer, a colorful figure in the blue and gold of his rank against the drab background of the military, read the simple service of the Church of England and the weighted and canvas-shrouded forms were consigned to the deep. Other burials at sea had taken place on the voyage, but under conditions which permitted less ceremony.

As the ship steamed through the night on the comparatively calm waters of the North Channel it seemed that final escape had been made from the perils of the voyage. But unfortunately tragedy still hovered about. The next morning, as the ship was on the sunlit expanse of the River Mersey approaching Liverpool, the end of the voyage, the regimental surgeon succumbed, a victim of exhaustion and influenza. This death marked the only one among the personnel, officers and men, who had been with the regiment through the training period at Fort Sill.

EDITOR'S NOTE: Colonel Gault's account of this transport episode prompts one to consider the various vicissitudes which may lurk in such an undertaking. In the face of modern long-range aircraft the problems involved have not diminished.

Training of Modern Cavalry for War

Polish Cavalry Doctrine*

The peacetime training of troops assumes proper importance only when conducted with due regard for the preparation of an efficient force for war. This fundamental principle is of especial importance in the case of those arms of the service which are difficult of organization during mobilization in an emergency, and whose training is more complicated. Among these are first of all the cavalry, aviation, and mechanized forces, the organization and training of which can not be provided by any makeshift methods. The procurement of the necessary animals and equipment is in itself a difficult task, but even more difficult is the matter of providing properly trained leaders and men skilled in the functions devolving upon the aviation, mechanized and cavalry forces.

From this it follows that while in the case of the infantry it is permissible in peacetime to maintain skeleton organizations that may be quickly developed and expanded in case of an emergency, the same is not true with regard to the three arms just mentioned. These must be maintained at their full war strength, since it will be difficult to raise their strength materially upon the outbreak of hostilities.

A fact to be considered in this connection is that all of these mobile forces will be called into action during the initial stages of the conflict, and that they will be utilized on strategic reconnaissance and attack missions, in establishing contact with the enemy before infantry concentrations, etc.

The difficulties incident to organization and training of the cavalry have resulted in the maintenance of the cavalry close to war strength. The cavalry is ready for action on short notice; yet the mounted warfare of the next war will differ greatly from anything in the past.

Are we prepared for the new warfare methods? This is a question the cavalry must ask itself.

What are the requirements that the modern cavalry must be prepared to meet? It would appear that the answer to this should be sought in the scope of future cavalry missions and the conditions under which these missions will be performed.

Various historical examples from wars of the past justify our conclusion that neither the heavy machine gun, the quick-firing gun, nor even the tank, gas or aviation will exclude the cavalry from the battlefield. It is quite obvious, however, that all these new modern weapons considerably complicate the employment of the cavalry in combat.

We are inclined to believe that in the future the cavalry will be capable of the execution of independent, and even strategic missions, particularly in the eastern parts of Europe. The cavalry may and should serve in the hands of the higher commander as a mobile force which, in conjunction with the aviation and mechanized forces, may extend the maneuver potentialities of the modern army, and guard it against stabilized warfare and losses in material incident to position warfare.

In stating that the strategic cavalry will in the future be capable of participation in decisive military operations, we assume that *only the* modern cavalry will be suited for such action, since only the modern cavalry will be capable of the execution of its missions under the modern, greatly changed warfare conditions.

What will be the missions of the modern cavalry? If we mean the full utilization of the cavalry in a manner not involving a scattering of efforts on minor frontier engagements, as was the case in 1914, it will be more expedient to employ the cavalry in large formations on independent strategic reconnaissance missions and on G. H. Q. missions.

In considering these missions to constitute the main objectives of the cavalry, we do not propose that when necessary a part of the strategic cavalry may not be employed for the protection, or in the interest of dismounted troops. The assignment of certain cavalry units for this purpose will not affect the general aspects of the cavalry formations.

The strategic cavalry may be employed either as part of a strategic force made up of several large cavalry units, a mechanized unit, an appropriate air force, motorized artillery, etc., or as independent divisions or cavalry brigades.

In either of the above instances the cavalry units will

*(Condensed Russian translation from the Polish.)

Detachment of Polish Cavalry shown during recent crisis with Lithuania

operate independently without any forces on their flanks, or in pursuance of orders from higher commanders, they may maintain contact with one of the flanks of their army or group of armies. The Cavalry missions will always be strategic in nature, involving a great radius of action and will often be in the shape of raids. Even in those instances where the cavalry will be employed on passive missions, it will still operate more or less independently.

This suggests the conclusion that the cavalry should constitute an independent force, relying solely on its own resources: it should be powerful enough to be capable of the execution of the missions that may be assigned to it. Next, it must adapt its tactics and combat training for independent action against any type of forces that it may encounter in the execution of its missions.

What will be the conditions under which the cavalry functions will be performed? So far the views prevail that in spite of the development of mechanized forces the mainstay in battle is still the infantry, reinforced with powerful auxiliary forces of the various arms and services. The highly mobile forces will serve as the basic means of strategic maneuver, the object of which will be to prepare, secure and exploit the massed infantry attack.

The military operations in Spain and in the Far East confirm this. They testify to the fact that the modern infantry constitutes the main factor in the attack around which are grouped the fire action and movement of all other types of forces. The massed infantry operates in one or more strategic units and is supported by large mobile forces the mission of which is to reconnoiter and clear the area before the main objective, whereupon these join the attack, developing the assault on the hostile flanks on a strategic scale (cavalry and mechanized forces) and against the hostile rear (aviation).

As regards the cavalry, we may note two phases of action: (1) along the front of the dismounted armies, and (2) on the flanks (subsequent to the concentration of the main forces).

Let us ask the question: against whom will the cavalry operate during these two phases—against the main hostile forces, or against the hostile mobile units?

Obviously, in the first phase, the cavalry will engage the mobile forces of the enemy operating before his main forces; while in the second phase, when the main battle will be fought, the cavalry will engage the enemy on the flanks, consisting primarily of mobile forces. Only at the very end of the battle, when a maximum intensity will be reached and when everything will be thrown into balance in order to gain a final superiority over the enemy, will the cavalry engage any foe that it may encounter, i.e., whether it be a mobile or infantry force.

Thus we arrive at the conclusion that the cavalry must be prepared for action (ie.e., trained in times of peace) first of all against mobile forces, and then against the infantry, which it may be called upon to engage during the crucial stages of the battle. During a pursuit or withdrawal from action the cavalry will first encounter hostile mobile forces which will either be covering the hostile withdrawal or engage in the pursuit. As can be seen, the cavalry will nearly always encounter mobile forces of the enemy, and in some fewer instances, but in critical periods, it will encounter massed infantry forces which it will be called upon to attack with utmost vigor.

In view of the fact that with the outbreak of hostilities the cavalry will face the mobile forces of the enemy, and that action against the hostile infantry will come considerably later, the question may be asked if all attention in the training of the cavalry should not be devoted entirely to action against mobile forces, assuming that its action against the infantry will follow as a matter of course during the conflict.

Cavalry training for action against mobile forces is so complicated in itself as to require nearly all available time. Obviously, it would be best if we could gain both objectives. But, considering this to be impossible, we may choose that which is of greater importance. And there can be no doubt that the training of the cavalry for action against mobile forces is more important.

Action against the infantry will come at a time when the cavalry is already inured to battle, after it has weeded out the weaklings, and when the cavalry officers have already gained practical experience in the control of their troops in actual combat. Thus we believe that the cavalry should first of all be trained in action against mobile forces, without, however, overlooking the need for training against infantry which some cavalry elements may encounter at the very outset of the war.

What type of mobile forces is the cavalry likely to encounter? What will be the characteristic features and powers of these forces? To answer these questions properly there is no need for any complicated study; we need only make a careful examination of the foreign military press for the purpose. The presence of large cavalry forces, in eastern Europe especially, and the formation in all countries of a large number of mechanized units, speak for themselves. Obviously, these mobile types of forces will not be employed on the defensive, for which they are not particularly suited; instead, these will endeavor to invade the hostile territory and to attack the enemy during his mobilization, to collect information regarding the concentration of his main forces, to seize favorable terrain for the friendly forces, and finally, to destroy anything which may help to prevent the main hostile forces from invading our own territory.

When and just how quickly may hostile mobile forces penetrate our territory? Will sufficient time be available in which to meet such hostile forces? All information testifies to the fact that the next war will start differently from the wars of the past; that it will start unexpectedly and without a declaration of war. Due consideration must be given the fact that each country devoting great efforts toward the organization of mobile forces, such as mechanized units, will want to make full use of these—concealing its plans of aggression to the last moment. This may produce a situation where prolonged periods of strained relations between countries, such as preceded the wars of the past and afforded time for preparations, will be reduced to a minimum.

Mobilization, which in the past consumed weeks of time, in view of the employment of motorized and mechanized forces, may be greatly accelerated and the minor frontier skirmishes of the past between border guards may be quickly converted into deep strategic penetrations by the motorized and mechanized forces of the opponents. At the same time, the aviation may go into action immediately upon the declaration of war, while the mobile units, made up of cavalry, motorized and mechanized forces, may enter the field within one, two or three days.

All this basically alters the old methods and concepts of mobilization and leads first of all to the need for the appropriate training of the mobile forces, since a conflict may start without warning.

There can be no mistake about it that any spark in the present political situation in Europe may well set off a conflagration. There is no telling just how long the present period of peace may last, if it still exists today. The European cavalry may suddenly find itself face to face with its powerful foes. Is it prepared for action? We believe that it is not.

This may be seen from an examination of the existing European cavalry training regulations. All existing regulations indicate that cavalry training is conducted in one direction only, against a single enemy. Whereas in the Western countries the small strategic cavalry is trained for dismounted action against hostile infantry or dismounted cavalry (the horse being regarded merely as a means of transportation), in eastern Europe the large cavalry forces are being trained for action in mounted formations against hostile cavalry and individual dismounted detachments which, however, will very seldom afford the cavalry an opportunity for surprise action. If we add to this the fact that the cavalry training regulations in all European countries fail to give sufficient attention to the action of the cavalry against other types of mobile forces, especially against mechanized, motorized and air forces, we may well conclude that the cavalry is not prepared for war, and that its training is one-sided.

The hostile aviation, with the very beginning of hostilities, will endeavor to destroy the cavalry with the aid of bombardment and attack planes; under favorable conditions, the aircraft will inflict heavy losses upon the cavalry and retard its arrival on the battlefield. Hostile mechanized forces, operating either independently or in conjunction with the cavalry, will not disregard or avoid marching cavalry forces; they will rather endeavor to destroy these in order to protect their own rear (the supply of ammunition, provisions, and especially fuel). Hostile motorized units, which might be utilized in the initial stages of the war to reinforce the cavalry and mechanized forces, will endeavor to prevent the cavalry from gaining the rear of the forces engaged in the initial operations and of the areas where the main forces are concentrating. We may assume that strategic units directed against the interior of the enemy's country, who will be protected by the various types of forces above referred to, will encounter great difficulties in action against the hostile forces. We are convinced, however, that, given favorable terrain, the cavalry will not only be able to cope with any such hostile forces, but that it will be able to defeat them. To insure this, however, the following conditions are necessary:

1. The cavalry must adapt its organization and armament, as well as its tactics and combat training, for action against each of the above forces (cavalry, mechanized, motorized and air forces), and not merely against any one of these;

2. The cavalry must utilize in its action all favorable conditions—first and foremost, the terrain and time of day, and weather conditions in a manner which will have a favorable effect upon its own action and an unfavorable effect upon the enemy.

Cavalry Tactics

In determining the proper tactics of the cavalry it is necessary to endeavor to overcome or offset the superiority

of the adversary; to exploit the deficiencies of the hostile forces, and in general to formulate methods of combat that would make it possible not only to get around or repulse the enemy, but also to defeat him. The favorable aspects of mobile hostile forces operating against the cavalry are the same as those of any highly mobile forces, and consist of the following:

(1) Great speed (with resultant facility of surprise attack);

(2) Very great fire power (with chance of inflicting great losses upon the cavalry);

(3) Lesser danger, than that confronting the cavalry, in possible losses from hostile fire owing to their speed (in the case of aircraft) or armor protection (mechanized forces).

It is particularly important to emphasize the fact here that the third (3) feature does not apply to motorized forces, which are even more vulnerable to surprise attack than the cavalry.

Along with these positive features, all mobile types of forces have a number of deficiencies, the more important of which are the following:

(1) Difficulty of control and supply;

(2) Dependence on roads to a greater or lesser extent;

(3) Slight combat efficiency in close country or when moving cross-country;

(4) Dependence on weather conditions;

(5) Slight capacity or complete unsuitability for night action.

Among the mobile types of forces the cavalry is less affected by the deficiencies above enumerated. By taking due advantage of the deficiencies of the other types of forces the cavalry may well defeat them.

How are the cavalry tactics to be adapted in practice against the deficiencies of the other types of forces which it will encounter in combat immediately on the outbreak of hostilities?

We shall endeavor to analyze the basic methods of cavalry action. Let us begin by stating that the speed, fire power and vulnerability of the cavalry are such as to promise little success for the cavalry in action against mobile hostile forces in open terrain.

Hence the first basic conclusion is that the cavalry—

(1) Must endeavor to deliver its attack against the enemy under conditions that will be unfavorable for the enemy; where he will be unable to make the best use of his forces;

(2) If it succeeds in this, the cavalry must attack with all the power at its command with a view to defeating the enemy, and if possible, to annihilating him;

(3) In view of the fact, however, that superiority in mechanical weapons will be on the side of the hostile mechanized force throughout the encounter, an effort must be made to curtail the hostile material and moral superiority without waiting for any favorable conditions: the cavalry must create these conditions.

The tactics of the cavalry must remain active and offensive in nature notwithstanding the changed conditions, otherwise it will lose its inherent characteristics by becoming involved in minor skirmishes, which always tend to exhaust the cavalry.

However, no generally active operations can always be imposed upon the cavalry. Cavalry combat has passed beyond its primitive stages of action. Due consideration must be given the fact that the dismounted or mounted attack will in each case depend on the particular action. In order that the battle be developed to its culminating point the cavalry action must be delivered not only with surprise effect but also with sufficient power, since any efficient modern force, fully equipped with modern weapons, can not be expected to become panicky merely on the appearance of the cavalry on its flank or rear. And in order to gather the forces at the decisive point at the proper time with a view to their employment at the crucial stages of the battle, these must be brought up in proper formation under the protection of modern military weapons.

Hence the movement of the unit to the point where it is to be employed requires much skill on the part of the commander, and is more complicated than the organization of the attack itself. To locate the enemy, to discover the particular point in his lines where to strike, to concentrate there all necessary forces in the face of all obstacles, and finally to deliver a successful attack in depth—all this represents the difficulties that confront the commander of the modern cavalry organization.

Commanders of cavalry forces will find it easier to overcome these difficulties if they will understand the deficiencies of their adversaries and know how to properly exploit them. The difficulties of control and supply are the Achilles heel of all mobile types of forces. Hence proper control will be maintained only during their initial attack, which will be the more formidable. After the initial attack the mobile forces always become intermingled and their action is considerably retarded. Planes must return for new loads of bombs, and some time elapses before they can renew their raids. Mechanized elements will need time in which to assemble and re-form, issue new orders; any change in the plans of action or even in the direction of the attack of the tank forces will involve much difficulty.

Motorized elements are easily separated from their transport equipment, which, in the case of a deep penetration complicates the supply of ammunition, and renders their advance dangerous; and the farther the troops advance the more dangerous becomes the situation of their motorized transport equipment. As regards march and supply situations, the long columns of all mobile types of forces always furnish good objectives for the cavalry; the cavalry may deliver raids against these by means of fire action; it may cut off part of the columns, or destroy a part of their forces or supply organizations.

The dependence of mechanized forces on good roads and their slight suitability for action in more difficult terrain should be reflected in the tactics of the cavalry.

(1) The cavalry should avoid open terrain and good

roads in order that it may not be surprised or destroyed by hostile air or mechanized forces.

(2) The cavalry should make its main effort in more difficult terrain and in areas with poor roads, in order to effect the turning of the flanks and gain the rear of the hostile motorized and mechanized forces in greater depth and to destroy them by brief surprise attacks launched against their more vulnerable points or dispositions.

Both of the above factors must be thoroughly stressed in the tactics and technique of the cavalry. Our cavalry (Polish) will have to overcome its natural aversion to action in forest and swampy areas, since the difficult terrain here involved will facilitate cavalry action and tend to conceal it against hostile aircraft. This applies mainly to small Cavalry detachments, up to a cavalry regiment. But larger cavalry units must also be able to utilize difficult terrain far better than heretofore.

Finally the last and most essential deficiency of the modern mobile forces is their poor adaptability for action in bad weather (rain or snow) or at night.

The fact must be recognized that action in bad weather and particularly at night is becoming ever more important for the cavalry not only because under such conditions the employment of aviation and mechanized forces by the enemy will be more difficult, but also because fog, rain, snow, and darkness afford more opportunities than daytime for surprise action against any hostile forces (hostile infantry and cavalry included) while darkness has the effect of reducing the effectiveness of hostile fire, which is highly important from the cavalry standpoint. The efficacy of the cavalry consists first of all in its ability to act with surprise effect; night, from this standpoint, affords greater opportunities, *provided the cavalry is thoroughly trained for night combat.*

It is impossible to cover in a single article even the salient features of cavalry tactics. In our present effort we merely wish to stress the fundamental requirements of cavalry tactics and training which in our opinion are essential in modern warfare.

Even in the organization of a march some distance from the enemy (without security measures) certain changes and modifications are necessary in order to protect the cavalry against distant raids by hostile air and mechanized forces. These modifications should be in the nature of provisions for security of the cavalry on the march:

(1) By means of reconnaissance (air or mechanized detachments);

(2) By the dispersion of marching columns laterally and in depth (as a protection againts hostile aerial bombardment);

(3) By the organization of small advance detachments, flank patrols and outposts, with the main object of protecting the column against attack by mechanized forces;

(4) By providing appropriate means of antiaircraft and antitank defense.

No part of the column must be without protection in the event of a hostile attack on the ground or from the air.

All these measures, however, will still fail to fully insure the security of the cavalry, and it must, as far as possible, utilize the night for its approach. This will not only afford it greater security but will also conceal its movements, which is so vital for surprise.

A march with security measures must be undertaken with greater precautions than a march effected without security measures, since in addition to protection against air and mechanized force attacks it must be protected also against hostile cavalry and infantry.

The fact, however, should be emphasized that it would be a grave error to send out strong security detachments in all directions, in accordance with a hard and fast plan, since this would involve a great expenditure of forces and decentralization of weapons.

Moreover, extreme cautiousness may retard the speed of the march and nullify one of the outstanding qualities of the cavalry, namely: its mobility.

In organizing a march with security measures, primary attention must be given the question as to whom the cavalry is intending to engage and against whom it is merely to maintain security and protection.

Hostile aircraft will always constitute a secondary enemy of the cavalry which, however, will require constant vigilance. This may be accomplished with undue difficulty, with the utilization of suitable weapons, particularly so in view of the fact that the hostile aircraft will prove dangerous only to large columns (regiments or higher) while the bombardment of small detachments will prove rather expensive.

All other types of forces, i.e., mechanized, motorized or cavalry forces, must be regarded as equal foes and the principal ones selected from among these. If, for example, the cavalry is in possession of information that it has before it a large cavalry force and some small mechanized detachments, naturally, the principal foe will be the cavalry. Therefore, the march will have to be organized so as to reach a more favorable position as quickly as possible for an attack against the hostile cavalry. At the same time, the flanks must be secured against sudden raids by the hostile mechanized forces, which must not delay the movement and action against the hostile cavalry. The precautionary measures here involved should take the form, first of all, of the selection of the axis of the movement that will be better protected against attack by the hostile mechanized forces; the proper disposition of antitank weapons; the protection of any defiles along the axis of communications, etc. With these precautionary measures the cavalry unit involved must proceed energetically to meet the hostile cavalry force. In the event of an attack by the hostile mechanized forces the marching column will be compelled to halt momentarily. The principal objective, however, must not be lost sight of in the meantime, and this principal and only objective must remain the hostile cavalry.

Under the circumstances, with the appearance of the hostile mechanized force it must be attacked and until it has been defeated and routed everything else must be regarded as secondary. Here the cavalry will merely pro-

tect itself against the hostile cavalry, infantry or motorized elements while directing all of its efforts toward decisive action against the mechanized forces. This will necessitate the reinforcement of the cavalry with tanks and additional antitank weapons and motorized engineer troops, and, as far as practicable with aircraft. With the aid of these, and by properly utilizing the terrain, the modern cavalry will be able to cope with the mechanized forces. The preparations should here be made during the day (reconnaissance, location of vulnerable points, concentration of forces, etc.) while the main attack should be delivered by the cavalry under cover of darkness.

In all instances, the march with security measures will vary considerably from those methods now in vogue. We shall not attempt to consider this question in greater detail; we merely wish to stress the flexibility of the forms of the march with security measures. The combat training of the cavalry must provide for the prompt adaptation of the marching columns to the changing conditions so that the cavalry might proceed without interruption until it reaches the main hostile forces, without being delayed en route by other hostile elements.

The cavalry attack will vary even more greatly in its forms than the march with measures of security. It must be capable of the execution of "partisan" raids against hostile motorized supply columns, as well as sudden attacks in mounted and dismounted formations, or fire actions on hostile marching cavalry columns and motorized detachments. The cavalry must be thoroughly trained in the technique of fire action against hostile mobile motorized and mechanized forces and in systematic action against hostile infantry occupying positions in defiles.

It is thus apparent that the modern cavalry is confronted by a number of missions which vary greatly in their nature, each of which has its distinctive features and requires greatly varying forms of execution. Consequently, cavalry training merely for attack in dismounted formation against hostile cavalry or infantry will not suffice under modern warfare conditions.

Let us consider the tremendous variations in the forms of fire action of the cavalry against an advancing hostile mechanized detachment, and the forms of attack against a narrow front of a hostile infantry force in a defense position. In the first instance the fire weapons of the cavalry will be widely distributed over the locality and will be almost completely decentralized, and the battle will assume the nature of individual fire action of separate dismounted cavalrymen or small groups with tanks. In any such duel, primary importance will be assumed not so much by the actual strength involved as by the individual training of the cavalry soldier, by his speed and daring.

On the other hand, in the attack against the infantry in defense position the fire power must be centralized as much as possible and be delivered in the form of powerful thrusts so as to insure the attacker an opportunity to approach the hostile infantry position for the charge.

And what, for example, is there in common between the swift cavalry charge against an infantry column and an assault delivered in depth at night against a mechanized force in bivouac, or a fire action against a mechanized column? There is very little similarity between these. The conditions involved are entirely different: each hostile type of forces has its own distinctive features, and the action against it requires quite different tactics.

The cavalry will frequently be utilized in defense situations on a wide front against infantry and even against motorized forces, which are unable to utilize their mobility at close range. In a mobile defense the cavalry may boldly launch counterattacks in dismounted or mounted formation from behind cover against open terrain.

In defensive action against hostile cavalry on a wide front the tactics to be employed will have to be different. It will here be necessary to select swampy areas with obstacles; defiles will be covered while leaving small open gaps in a manner which will permit the destruction of the enemy when he becomes scattered and dispersed by reason of the obstacles. The cavalry here operates from behind the obstacles and from favorable positions.

The defense against mechanized forces on a wide front will be even more difficult. This will call for exceptionally favorable terrain and barriers that the mechanized forces will be unable to negotiate. Here the enemy should be destroyed from ambush, by the use of mined fields as well as by individual action or by the action of small detachments of not more than a platoon in strength, which, by properly utilizing the terrain should manage to get to single tanks and destroy them with their small arms or hand grenades.

The conduct of containing actions is more favorable for the cavalry, but the form of action here employed also requires modification. As in the case of a defense on a wide front, in a containing action (mobile defense) the best situation will be where the defender possesses greater mobility than the attacker. In this connection, small cavalry detachments may successfully conduct containing actions against large infantry forces either by fire action or by brief counterattacks or by the utilization of either mobile or position defense (until the approach of darkness). Each of the four forms referred to requires different methods of execution. It should be emphasized that the employment of fire action alone will fail to produce the desired results in a containing action and might bring about prompt withdrawals and loss of ground. Be that as it may, the conduct of containing actions against hostile infantry by a cavalry force is a comparatively simple matter. This will be more difficult where the hostile forces include cavalry. There is no more complicated or dangerous mission than a containing action against a hostile cavalry force twice the strength of the containing force. Where the officers and men on both sides are of equal efficiency, the weaker force will always be courting defeat; since the mobile hostile force effecting a penetration at a given point may swiftly proceed into the depth of the disposition of the opponent's forces and launch a parallel pursuit, allowing the containing force two alternatives: either to attack the advancing enemy, i.e., engage him in

combat and be enveloped and destroyed; or else to withdraw, i.e., abandon the execution of its mission. Hence there can be no containing action against a cavalry force along the lines of action which may be employed against an infantry force. It is necessary to select a more suitable point (defile) and to maintain nearly all available forces in concentrated form, or else to contain the enemy at a more favorable point by fire action while preparing a way for a withdrawal to a rear position considerably farther back than in the case of an action against an infantry force.

The containing action will be much more difficult where hostile aviation participates in the action and where it prevents the concentration of the force for a withdrawal or where instead of the cavalry the enemy may employ mechanized forces.

Where action is to be conducted against a large mechanized force, neither a containing action with fire weapons, nor an attack or a mobile defense will suffice to contain it, and any such action might easily result in the destruction of the cavalry involved. Other methods will have to be found: positions will have to be taken up behind barriers that the tanks could not negotiate; the cavalry might take up defense positions, or, it may concentrate all its forces in several groups in woods, permit the tanks to pass and then cut off their retreat, while at the same time blocking the advance of the hostile infantry and cavalry in the wake of the tanks, wait until dark and then attack the tanks in the positions which they will have taken up for the night.

Thus we note that the conduct of containing actions against each of the types of forces above discussed requires different forms and methods. Obviously, where the cavalry will operate with mixed forces, even greater flexibility and maneuverability will be necessary.

Briefly analyzing the forms of cavalry action we arrive at the following basic conclusions:

1. A properly equipped modern cavalry may successfully engage any type of forces on the field of battle provided it operates not according to a single pattern but rather by taking advantage of all of the negative features and mistakes of each of the particular types of forces.

2. In order to be able to accomplish this it is necessary to be familiar with the special features of each type of forces: only then will it be possible to determine the method by which the mobile force may be defeated;

3. This is a function of each and every cavalry officer; press discussion will aid in the study of the enemy and will enable one to reach basic conclusions concerning the method of action to be adopted against him;

4. Therefore, while the proper tactics are being developed, it is necessary to undertake a study of these various missions with as little delay as possible.

Cavalry Training

From the above discussion one highly important conclusion suggests itself, namely: the great variety of missions devolving upon small and large cavalry units impose the need for the training of the cavalry in a manner that will not restrict it to a single pattern. The great variety of subjects to be covered by the cavalry officer, noncommissioned officer and soldier demand strictest economy in training schedules. The training in some subjects may be allotted less time, while other subjects may be entirely eliminated. Let us ask ourselves the question: what is each cavalry unit, from the smallest to the largest, required to accomplish?

First of all, if the cavalry is to maintain its existence and engage successfully in combat in the future, it must preserve its mobility, regardless of the changed conditions, i.e., it must be capable of maneuvering so as to be able quickly and without suffering any special losses to reach those objectives against which it is operating, or to maintain positions in defense. With this object in view, the cavalry platoon, just as the cavalry division, must possess complete mastery of the technique of long, swift marches which it should be able to execute readily over poor roads, through forests, in rain, snow, in fog and at night, since these conditions will best favor the cavalry action. Both in reconnaissance and in combat all cavalry commanders, from the corporal to the divisional commander, must feel themselves confident when moving across country. The entire cavalry equipment must be adapted for movement over the worst possible roads. Prompt dispersion and concentration on the march during air attacks or upon an encounter with mechanized forces must be accomplished automatically and without confusion. The maintenance of communication during such brief but intensive actions should be worked out beforehand, and function properly, since otherwise the cavalry units in question may become scattered. Efficient march training under difficult conditions constitutes the first and foremost task in the general scheme of cavalry training.

The next most important mission is of course that of combat. What is to be given more consideration: dismounted action, or combat in mounted formation? This is a difficult question to answer, since both are highly important. However, we might state that combat in mounted formation will be conducted in more diversified forms and its training will consequently require more time. Both forms of combat (dismounted and mounted) will very often be alternately employed; hence it will be necessary to pass from one form of combat to the other. These two forms of cavalry action cannot be separated either in theory or in actual combat training, as has been the practice heretofore. The strictly dismounted action consists only of an advance from lines of departure, while the strictly mounted action consists only of the charge. All other diversified forms of combat of the cavalry will involve a combination of both mounted and dismounted actions.

It is important to be able to approach as closely as possible to the enemy in mounted formation and then dismount quickly and deliver either a fire action or a brief assault. In some instances, after a fire action or dismounted attack it will be necessary to launch a mounted charge in order to exploit the success of the previous action; at

other times a hostile cavalry or mechanized column may be attacked in mounted formation without any preliminary preparations. Finally there may be a situation when, while forming a screening force, the cavalry will be required to disperse, conceal the horses in woods or settled areas and engage in dismounted action against hostile mechanized forces. There may often be a situation when at night it will be possible to approach closely to the disposition of hostile mechanized forces, in which case the actual attack will have to be made in dismounted formation.

In most instances the march and approach of the cavalry to the enemy will be effected in mounted formation, while the actual fighting will be carried on in dismounted formation. Hence the cavalry must be trained both in mounted and dismounted action.

The mounted attack may be given less attention in cavalry training since such action is simpler and its actual employment will be less frequent. As regards mounted formation training, first consideration should be given to march training and to movements on the battlefield from one concealment to the next under various conditions. The entire cavalry training should be undertaken with this in view. If every cavalryman will be prepared to cover a 100 km. march without ruining his horse; if every rider and every cavalry detachment will be able to utilize their animals efficiently and systematically on poor roads by day or by night and in any weather; if all commanders will be able to orient themselves properly in woods and in close country; if they will be able to lead their units under concealment, with speed, whether it be a patrol or an entire mobile force; and if, finally, the deployment and dispersion of columns during an aerial attack or their preparation for a cavalry charge will be accomplished with lightning speed, and the dismounting for action, concealment and the summoning of the horse leaders will be accomplished efficiently, we may regard them as representing a modernly trained cavalry.

This will require a great deal of effort; hence everything else need receive secondary consideration only. Much valuable time may be conserved by a curtailment of training in the use of short arms. The time allotted for sabre practice is not being utilized economically; individual sabre practice should not take up more than one or two training periods per week. Mounted training includes so many important subjects as to require a restriction of the time allotment for training in all other less important subjects.

Let us consider dismounted training. Primary importance is here assumed by the following:

1. Proper organization and execution of fire action and brief surprise attacks immediately upon dismounting;

2. Advance in darkness against the position of hostile mechanized, or motorized forces and cavalry, as well as against infantry in defense position;

3. Daytime action against hostile mechanized forces.

The next phase in the combat training should include training in systematic attacks in depth in dismounted formation (in daytime) and in position defense. This too involves many training problems, inasmuch as the attainment of a high standard of efficiency in all forms of combat, especially in action against mechanized forces and in night combat will be far from easy, while without this the cavalry will be unable to cope with its foes.

As regards marksmanship, the cavalry training program should be much different from that of the infantry. The infantry engages in prolonged fire action systematically both in offensive and defensive actions at considerable range from the enemy. The cavalry, on the other hand, operates by means of brief thrusts at close range, in which action fire concentration assumes primary importance. Thus in the case of the cavalry primary importance is assumed by speed and accuracy of fire at close range. To be able to fire at a range of 40 to 50 meters against chinks in the armor of the tanks will be of greater importance for the cavalry than fire action at a range of 400 meters. Moreover, the cavalry must be trained for fire action at night at a range of 200 to 300 meters and over. The technique of hand-grenade throwing is also of vital importance to the cavalry.

On what subjects may the time be economized?

Aside from the time that may be saved in training with respect to the use of small arms, much time may be saved in the formal training for sport competitions, gymnastics and light athletics.

Sports are highly desirable for the cavalry. This, however, should not take up the time necessary for other important training. Let any lieutenant come to the barracks and select all those men interested in gymnastics. Let one organize several football teams; another, volley ball players; a third—light athletics; a fourth—boxing matches; a fifth—sabre and lance practice. There will be many who will volunteer for these and the athletic spirit may thus be fostered. The example of one will inspire the others, and soon the regiment will have mass competitions, regimental meets, athletic records, etc. It would be particularly well if all officers and noncommissioned officers would take an active part in these. This will serve to bring them together and to develop understanding among them in combat situations.

Finally, the cavalry must be trained in joint action with other types of forces, especially with those with which it will be called upon to operate. Each and every man must understand the nature and capacity of those forces with which he is to deal; he must especially familiarize himself with their equipment and know what to expect of them. A simple practical training exercise will here be worth a month's theoretical instruction.

There have been many contentions to the effect that the cavalry has outlived its usefulness. We would rather venture the statement that it is not the cavalry which is getting out of date—that instead it is our peacetime stagnation which induces thoughts along this line. Only by keeping abreast of the developments and changes that are taking place around us may we insure ourselves against surprises.

Horses For Defense*

Those who live on the land are entitled to know if the horse has really been dealt a death-blow by machines

Will the next war be won by machines? What rôle will the horse play in that war?

The headline strategists and tactical commentators have built up in the public fancy a fantastic picture of the next war between first-class powers. With the potential destructive powers of modern mechanical gadgets these experts of the pen promise a tragic catastrophe. They envision great flocks of bombardment aviation in wave after wave searching out and utterly destroying the critical areas of a hostile country. Operating under the Douhet Theory[1] every source of vital matériel would be destroyed without delay. All facilities for manufacturing additional airplanes and munitions of war would be disrupted if not eliminated. Public utilities of every large city, power plants, water reservoirs, important railroad centers would be obliterated. Terror would prevail.

Their picture grows. As the first plane takes to the air mechanized forces would hurl themselves toward hostile borders to be followed by swift-moving motorized columns of infantry, artillery and machine guns. (Let us early understand that by mechanization is meant any vehicle which carries armor plate and guns; motorization is merely the use of motor vehicles to transport men and supplies or to tow artillery and other weapons.) By its very speed the movement of these monsters would overpower and wreak destruction. With the air raining bombs of ever increasing deadliness and the ground swarming with armored vehicles an early victory would be wrenched from a helpless opponent.

No profound analysis is necessary to understand that according to these pseudo military authorities the horse has no function nor rôle in this panorama. To them he is obsolete.

We may do well to remember the sagacious counsel of the late Secretary of War Dern: "You cannot purchase national defense with gadgets—no war will ever be won with gadgets alone."

Let us view this picture in the realm of reality. True, great numbers of airplanes will darken the sky as they wing forward to their objectives. Perhaps initial destruction of property and innocent life may be frightful. The first bomb, its roar mingled with falling brick and screaming inhabitants, will evoke an atmosphere of fear. The second bomb which falls among a virile people will incite the inherent anger of that race and bring into play the spirit of viciousness which leads only to retribution. The cry will be, "A child for a child, a house for a house, a factory for a factory." The very possibility of instant retribution will forestall the practical application of the Douhet Theory.

The airplane in reality has become the tool of the politician in international affairs. Its possession, particularly in qualitative numbers, is used as a diplomatic threat rather than a weapon of military offensive power. Why the great cry of ever increasing air armadas? A careful analysis would disclose the number of airplanes necessary to inflict serious retribution in any hostile country. When that number is reached the maintenance of greater numbers is wastage of capital or a tool intended for use as a diplomatic club. The situation of today in China would have been different had China, in the summer of 1937, possessed 1,000 airplanes capable of bombing the congested cities of Japan. Although Japan was accredited with an air force of 3,500 planes, still the 1,000 Chinese planes available for long range employment would have been an important factor towards peace.

The latest crucible of real war has been in Spain. In the main operations the Loyalist forces were ordinarily dependent upon a single highway over which supplies were routed. As with all highways this road had its share of bridges, culverts, and fills. With a preponderant air force the Insurgents throughout two and a half years of strife attempted to interrupt traffic along this road. At no time were routine supplies to the Loyalist front lines ever seriously affected. For months, also, the planes of Franco attempted repeatedly to destroy the electric power sources of the city of Barcelona. The lights never failed in that city until Franco's infantry and cavalry took actual possession of the power houses well back in the hills.

Let us assume reserved seats high in the sky and with binoculars gaze down on an entire theater of war through the clear atmosphere of factual consideration. The omnipotent rush of the mechanized forces toward hostile terrain is abruptly halted by the presence of frontier forti-

[1]General Douhet, Italian, a few years ago enunciated the doctrine of utilizing air power to disrupt or destroy enemy manufacturing facilities, disorganize great centers of population by destroying utilities, and through bombardment of civilian populace to produce such hysteria as to break any will to resist. This theory has been subsequently discredited by experience in Spain and China.

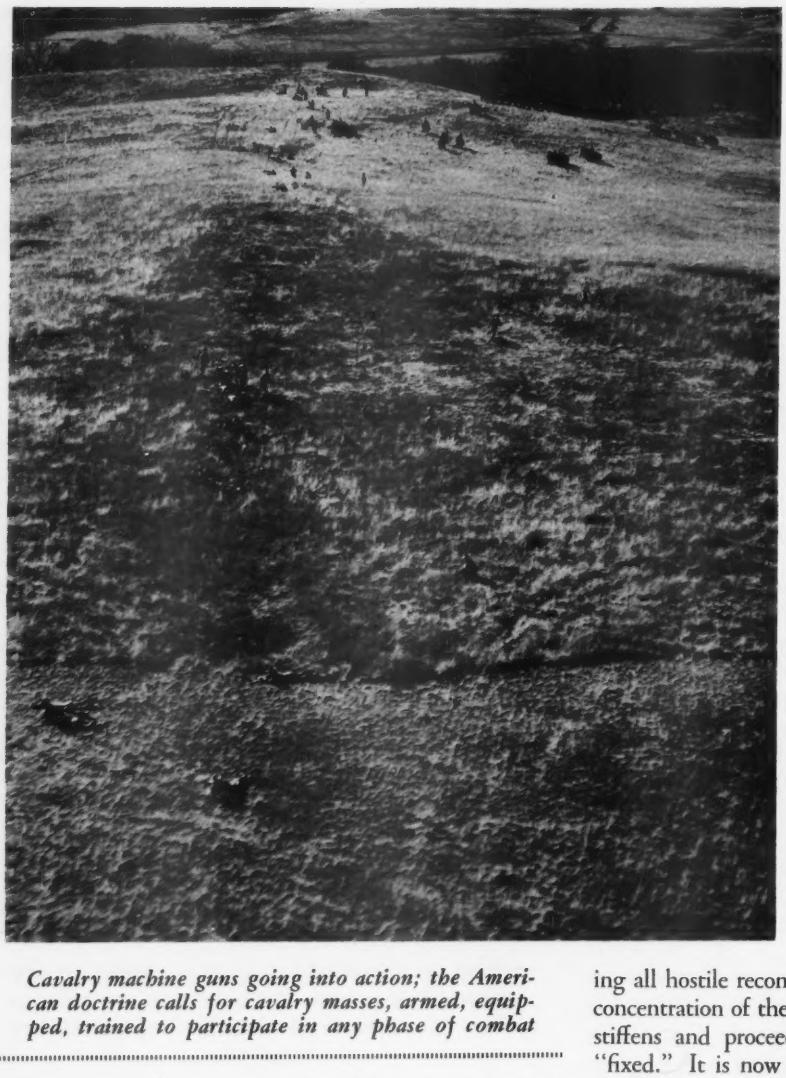
*By Major Charles S. Kilburn. **Reprinted from "Country Life," July, 1939.**

fications. Immediately the conflict subsides into one of position warfare. Where no fortifications exist or where these barriers are flanked we see the mechanical forces advancing rapidly on all roads over a broad front. From the opposite direction the same movement is discernible. First contact is quickly made. Flashes of fire mark the bark of weapons. Vehicles turn to the nearest cover. From some vehicles clouds of smoke signal the first casualties. Radio messages fill the air. The main mechanized bodies slow up and then branch out in tactical formations as orders are received and the attack commences. Small, fast cross-country vehicles dart here and there depositng anti-tank weapons and their crews behind selected shelter. Main bodies continue. As they come to grips the smoke and din is bewildering. Losses are heavy on each side. Now one side retires while the other assembles for its next move. In the meantime the motorized infantry and artillery of each side follows at accelerated pace. From a grove to the right front the leading truck is struck and disabled. The next few vehicles mushroom into the first available cover. Their occupants dismount and deploy for action. This hostile fire must be neutralized. As the leading vehicles hastily dash for cover the recoil is felt for miles toward the rear. Enemy artillery goes into action. Now its fire finds its target on the road. Accurate interdiction denies further movement by road. Trucks attempt to continue forward under cover. Unforeseen bad ground brings the pace to snail advance. More infantry take to foot. Now starts the same historical, slow, cautious advance forward. As the infantrymen wind their way through gullies and wooded slopes they will soon deploy over a wide front as the fire of hostile artillery commences to register. Here, then, will occur the first real casualties of the war among uniformed soldiery of the country. (World War figures developed the astounding fact that artillery projectiles accounted for 80% of all casualties in the war. War in Spain has confirmed the accuracy of this estimate.) Now comes the danger of the conflict settling into one of prolonged attrition along broad fronts as it did in the fall of 1914. Now is the phase when the people will pray for competent generalship. Their army now needs a bold and imaginative leader with a keen, analyzing mind who can take the facilities afforded by modern science and formulate a plan which will result in a continuance of open warfare. Only a war of movement is capable of producing an early and adequate victory.

Command post in open warfare: note antiaircraft protection, airplane signal panel, scouts

No nation, however, should be beguiled into war ex-

What a cavalry charge really looks like: Valiant horsemen charging boot to boot is a theme long relegated to poets and the movies



Cavalry machine guns going into action; the American doctrine calls for cavalry masses, armed, equipped, trained to participate in any phase of combat

pecting a quick and easy victory. Had Japan, even with her preponderant facilities for modern war, foreseen a conflict now enduring over two years the present incident in China might not have occurred. No one visualized the bloody war of Spain lasting for a period of two and a half years. No! Wars are not won in weeks, but in years. As General Harbord is accredited with saying: "The next war will start in the air, but, as with all wars, will end in the mud."

The operations so far observed involve only the advance security elements. The location and composition of the main forces of each side are still unknown. It is now that the need of fast dependable ground elements is vital. It is now that the horse cavalry comes into its time honored rôle. Information must be gained of the actual strength and makeup of the hostile resistance just ahead. Likewise, the main hostile bodies must be found. There is a military expression that in war you "find 'em, fix 'em, and then fight 'em."

So long as long columns advance along well established highways vigilant airmen and advanced mechanized elements have no trouble in finding and reporting the actual location and strength of the hostile advance. It is when the major movements leave the highways under cover of the wooded countryside and march at night that anxiety shows up at General Headquarters as to the real intentions and plans of the enemy. Now, as during the past centuries of warfare, do the words of Frederick the Great to his generals still hold: "If one could only be acquainted beforehand with the enemy's designs it would always be possible to defeat him even with an inferior force." As the air loses contact through counter measures either by hostile pursuit aviation or antiaircraft fire, and the advanced mechanized elements have been either forced back or brought back for relief, General Headquarters then calls for cavalry in its first rôle of finding the definite location and strength of the enemy. The orders may direct that the cavalry, with its overwhelming strength in machine guns, seize and hold critical ground which the commanding general wishes to keep in his possession. On other parts of the front the cavalry may be given the mission of preventing all hostile reconnaissance to hide the movements and concentration of their own forces. As the enemy advance stiffens and proceeds to develop for battle he is then "fixed." It is now the job of the more static elements, the infantry and artillery, to take over their rôles.

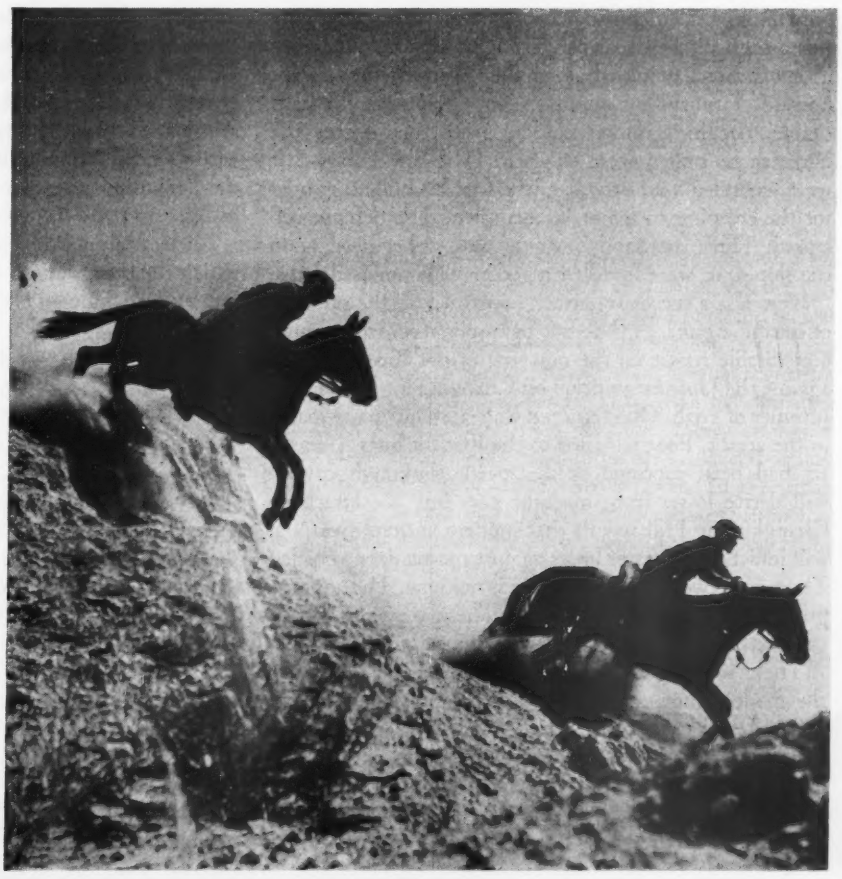
Let us investigate how the masters of war have used cavalry during comparatively recent history. Napoleon, in the minds of many cavalrymen, was the last great master who understood the value and the rôle of this arm. It is said that Napoleon won a majority of his battles while still fifty leagues from the battlefield. He would dispatch his cavalry far to the front with two objectives. One to find the strength, location and direction of enemy movement; the other to deprive the hostile cavalry from ascertaining the movements of Napoleon's main forces. Receiving reports of the enemy strength and movements the Little Corporal then evolved his definite plan of attack. He visualized the area in which he wished to fight. He routed his columns on different routes of approach with marching time so nicely synchronized as to bring each unit on the battlefield at the proper time in the proper place. His cavalry after performing its first function was assembled, usually on a flank, and was then available for participation in the real battle when the opportunity for

complete destruction of the foe presented itself. Read Napoleon's LI Maxim of war: It is an important business of cavalry to follow up the victory, and to prevent the beaten enemy from rallying.

In our Civil War this touch of Napoleon was not felt until Grant brought in the great Sheridan and consolidated his cavalry into a real implement of offensive action. Theretofore, Union cavalry was scattered to the four winds performing the insignificant rôles of messenger, escort and occasional raiding parties. Lee, with his genius, had early organized his cavalry but used it mainly on the mission of finding the enemy and preventing hostile surveillance of his own movements. The lack of Confederate cavalry as a fighting force at the Battle of Gettysburg had much to do with our present status as a unified nation.

Cavalry is an arm that finds its best usage in times of great stress or of great opportunity. It fights in minutes and hours as opposed to the weeks and months of which infantry is capable. The great leaders therefore have shown constant regard to its conservation and availability when it would be most valuable. They have not squandered its strength on useless marching and counter marching. They have realized that it is not easily replaced. They have not called upon it for the execution of impossible missions. Cavalry was not created to attack nor to breach an organized position. The tool for that lies with the great rugged fighting arm, the infantry, supported by artillery. That team is the only one which possesses the powerful drive which is capable of advance against the power of modern defense. As the enemy, with reserves and other means, counters these powerful thrusts, there usually comes a time when he is thrown off balance. It is while he is off balance through lack of reserves or exhausted troops that the master, having held his cavalry fresh and capable, throws it in at the opportune moment to produce rout and possible destruction. There are many, having never witnessed maneuvers of present-day cavalry, and knowing little of its present organization and equipment, who visualize cavalry as charging in boot to boot fashion under the romantic rôle of the poet's prose or the modern movie. The use and military rôle of cavalry has been briefly pictured up to this point. It is not fashioned as a tool of irresistible force, but more as a weapon of great inherent battlefield mobility. When Napoleon threw his far-flung squadrons well to his front he was making strategic use of the arm; that is, he was influencing his opponents into the area in which he wished to fight. When he reassembled his cavalry and held it for an opportune participation in battle he was using it in a tactical manner. Thus, when we say that cavalry has great mobility on the battlefield we mean it has great tactical usage. The American regiment of cavalry carries into battle 132 machine guns and over 1,000 rifles. A capable commander then has an instrument in which he can place devastating fire on hostile points from the most advantageous angles. A battle in many respects can be compared to a conflict between individuals. No powerful man has trouble with a smaller one so long as he keeps his small opponent to his front. But if the smaller and more active participant can get in a few well directed blows to the kidneys from the rear, or a rabbit punch beneath the posterior cranium, the larger individual is nonplussed and placed in a disadvantageous position, to say the least.

As cavalry moves on the battlefield, one see no dense column of horseflesh riding stirrup to stirrup, but wave on wave of horsemen with five to ten yards between indi-



American cavalry scouts in action at top speed over trying terrain: this could hardly be described as a place to use modern motor cars and explains why cavalry is useful

viduals and twenty-five to fifty yards between waves. Nor is this movement ordinarily confined to the open, easy going areas, but takes place on the rougher and less negotiable ground over which they move faster than any other unit. To the ignorant, the movement of horsemen in battle against the destructive power of the modern machine gun appears impossible. Cavalry movements under these conditions were made repeatedly in the World War and have been made more recently during the Spanish Civil War. An outstanding example of this type of cavalry action was reported by the Associated Press during February of 1938 when Franco hurled his Insurgent horsemen against the heights of Teruel. The Loyalist forces felt secure in the possession of the heights surrounding that city. Towards evening the alert sentries holding the outpost line gazed boredly down the slope. The machine guns were laid to graze the ground naked of cover for several hundred yards. There was no necessity for alarm. An Insurgent attack would be heralded by an artillery bombardment. Then the long lines would form far below. In painfully slow and short rushes they would mount the heights against the clattering guns of the defense. There would be ample time to reinforce the outpost line; ample time to form the reserve, issue ammunition, don heavier clothing against the frosty air, before the attack had a chance to reach the first line. At least 400 yards to go and not more than 100 yards up hill in 6 minutes would require at least 24 minutes. As the dusk grew heavier a sudden movement occurred below. There was a high pitched roar of voices. A sudden thundering of hoofs. Steel twinkled along their front as they swept upward. Twenty-four minutes? No, a minute and a half. Before machine gunners could elevate their sights the Moorish horsemen were on them. The few horses that were wounded were struck in the legs by bullets sighted for the creeping forms of infantrymen. The defense collapsed. Three thousand Loyalists were either dead upon the slopes, or were huddled together with upraised arms.

Here was a successful attack by cavalry in the presence of machine guns. A different picture is recorded through a creditable report on the outcome of the Russian attack against the Japanese position on Changkufeng Hill in the summer of 1938. One hundred Russian tanks participated in the attack. Four returned to the Russian lines. Ninety-six had been captured or destroyed. Although cavalry will derive losses from machine gun fire, the attack on Changkufeng Hill reveals that modern antitank weapons will inflict even greater losses against mechanized vehicles. The race between gun and armor is not new. The antitank gun is now master of the tank. These weapons will be present in increasing numbers on the next battlefield.

There is a prevailing opinion that the capabilities of the modern motor vehicle have supplanted need for the horse. Let us examine realities. When a theater of war is at a distance from the areas of concentration, cavalry, like all other arms, enters the theater by rail or boat. Once in the theater, modern cavalry can march for a week at fifty miles a day, cover one hundred miles in twenty-four hours, or one hundred fifty miles in forty-eight hours. There is no conceivable area of modern war where greater distances would have to be negotiated to bring the cavalry into the battle zone in ample time for the performance of its rôle. The long fast motor columns facing attack aviation and surprise fire of hidden weapons will have been halted and forced from the roads in sufficient time to allow the cavalry to pass onward in their advance to screen the movements of the main forces. Military authorities agree that the machine gun is the backbone of defensive warfare, and the motor vehicle has facilitated the movement of troops and supplies, but neither have in any way affected the value of cavalry on a future battlefield. Let us quote wing commander A. H. W. James,[2] M.C., member of Parliament, on November 9, 1938 who addressed the Royal United Service Institution of Great Britain. He said, on speaking of the Spanish Civil War: "Again I salute Spanish bravery. The superiority of fire power, equipment and training of Franco's troops were the main factors for success, but in the final operation the success rested with a cavalry division. *It is hardly fashionable to mention it in this country just now,* but the fact remains that the cavalry has been THE successful arm of the current war in Spain. One does not see many tanks there; nor are they highly thought of. The final recapture of Teruel was based on an outflanking movement to the North by a cavalry division."

In June, 1938, Brigadier General Henry J. Reilly, wartime brigade commander of the Rainbow Division and observer in seven major Spanish battles, wrote from Zaragoza, Spain: "Cavalry is not a thing of the past. Neither has it got to take to gasoline and grease to exist. Horse cavalry is playing an important part. Long talks with General Monasterio, Chief of Cavalry, who says in the beginning no general wanted cavalry; now all want it."

Let us examine the record to determine the manner in which the great nations of the world have organized their armies to include an element which can perform the rôle of cavalry.

In Great Britain, cavalry comprises 4.3% of the regular army. Twenty-two regiments of cavalry exist. Seventeen regiments have been mechanized. Three regiments of the line continue to be mounted on horses, as do also two regiments of the historic Household Cavalry usually devoted to the ceremonial duties in connection with the Crown. Under present unsettled conditions in Palestine, England has rushed her horse cavalry to Palestine as well as several regiments of her mechanized cavalry. Under the difficult conditions which exist in that region, there is an emphatic desire on the part of many to send the two household regiments to Palestine. If such proves to be the

[2]The chairman, on introducing the lecturer, said that probably there was no one better fitted to speak on this subject. Wing Commander James had made a great many visits to Spain since the outbreak of the Civil War, and had probably been given more favorable opportunities than anyone else for actually seeing the battlefront and observing the course of the operations; in fact, he could truthfully be described as an eye witness.

case it will mark the first time in history except for the World War that household troops have left Great Britain proper. Undoubtedly, the doctrine of Great Britain regarding cavalry is one necessitated by realities. Lack of surplus animals for war needs, replacements and expansion, has been a factor in English policy. A large amount of shipping under the stress of war time needs would necessarily have to be employed for the shipment of forage and animal replacements. The area of future conflict for British arms is fairly well determined. The existence of a highly developed road net together with the restricted distances of that region, quite naturally, have affected England's trend toward mechanization. It might be added, however, that in India, where different conditions prevail, the local government maintains twenty-one regiments of regular cavalry.

In France, there appears to be a policy of rational compromise in the organization of cavalry. Approximately 7% of her active establishment is devoted to this arm. Of the forty-seven regiments, five have been mechanized and others are authorized. The remaining forty-two regiments continue on a horse basis, but have been considerably augmented by mechanization and motorization of subordinate elements within the regiment. National interests in North Africa have undoubtedly influenced French policy with respect to cavalry.

The French feel that the horse is the most satisfactory means for rapid movement across all types of ground; that cavalry fulfills the requirements of an essentially mobile arm which possesses a comparable amount of fire power. In their belief, cavalry is of imperative need in the early days of a war and accordingly should be available in strength at all times. The French consider cavalry an arm for use in periods of crisis, and that the high command should have an adequate appreciation of the need to conserve it and have it ready at the desired time to perform the services to which it is primarily adaptable.

In Germany, approximately 4.1% of the regular army is devoted to cavalry. That country maintains sixteen regiments of horse cavalry, but has placed her main reliance in the mechanized organizations which comprise her famous Panzer Corps. With three exposed frontiers, Germany has perfected a system of radical and arterial highways paralleling her boundaries. Her needs, therefore are strategic during the first days of war, rather than tactical, and for this reason mainly she has placed her reliance on strong mechanized elements. If, as many believe, Germany looks to the east, it is not beyond the realm of prophecy to foresee a material increase in the strength of her regular cavalry. Reports already confirm this view. Geography of that area indicates a lack of improved roads and a rough and sparsely settled country which would affect military operations therein.

Cavalry in Italy comprises approximately 2% of her active forces. She maintains twelve regiments of regular cavalry, and up to date has seen fit to place reliance in motorization of reconnaissance units rather than in mechanization of her cavalry. Her impregnable mountain border to the north together with her system of recently constructed highways have had much to do with this policy. According to *Time* (December 6, 1937) the Italians recently have been heavy purchasers of American horses for breeding purposes. Possible eventualities in North Africa may have had much to do with this effort to increase her supply of well bred animals.

Although her people have little native aptitude for horsemanship, Japan for some time has maintained twenty-five regiments of cavalry which comprise approximately 5% of her regular establishment. Seventeen of the twenty-five Japanese regiments are scattered throughout the army as attachments to infantry divisions where their use is confined more strictly to reconnaissance than to combat. The remaining eight regiments are organized into brigades intended for traditional cavalry rôles and are maintained along her Siberian border. Lack of available resources in animals and limited supplies of forage have curtailed this country's organization of cavalry. It requires little imagination to visualize the effectiveness of well organized cavalry in the present operations in China. Against Japan's long thin lines of communication, a commensurate Chinese force of modernized cavalry would play havoc with Japan's system of supply.

Poland has long regarded cavalry as a corps d'elite. With an abundant source of animals and forage, Poland maintains forty regiments of regular cavalry, which comprise about 15.5% of her active forces. Poland has mechanized no cavalry. Lack of a highly organized motor industry, together with an undeveloped hinterland insofar as improved highways are concerned, possibly has had much to do with her policy in this respect. Polish cavalry is maintained for participation in battle, and the Poles foresee its useful rôle in attacking the flanks and rear of any hostile invasion which violates the sparsely settled regions which make up that country.

Russia maintains the greatest cavalry force of any world power. She has sixty regiments of regular cavalry, involving approximately 154,000 men and horses. Twenty-two additional regiments have been mechanized. Thus we find a total of eighty-two Russian cavalry regiments which comprise approximately 11.8% of her immense standing army. The Russian doctrine is very similar to the Polish in that cavalry operations are visualized against the flank and rear of any enemy invasion. In the earlier stages of a war her large cavalry masses closely supported by aviation and armored forces will be found operating far in advance of the main army.

The American army since the war has maintained in the continental limits of the country fourteen regiments of cavalry which comprise approximately 5.9% of the Regular Army. Twelve regiments of regular cavalry are maintained together with two mechanized regiments. The American doctrine also prescribes the employment of large cavalry masses, armed, equipped and trained to participate in any phase of combat. With a reservoir of over twelve million horses and four million mules, the

United States is peculiarly well equipped to maintain a numerous cavalry. Our cavalry has taken advantage of the gasoline engine to augment its power and capabilities. The old time mule-drawn escort wagon has been discarded in favor of the modern four-wheel-drive truck to insure a constant and rapid flow of supplies and ammunition. For long range reconnaissance in order to conserve horse flesh, each cavalry regiment is equipped with ten (in war) armored scout cars which have proven their effectiveness in all cavalry maneuvers during late years.

Prepared to participate in the early phases of any war we also maintain nineteen regiments of cavalry in the National Guard. In the event of necessity the United States can very early place in the field six cavalry divisions and one mechanized brigade, which, when brought to war strength would involve approximately 55,000 men and 60,000 horses. Our mechanized cavalry equipped through the most highly organized automotive industry in the world is on a par with any cavalry of this type to be found anywhere. As time goes on, the American people should feel assured that there will be maintained in our cavalry the balance between these two types which is best adapted to national needs. A theater of war has much to do with the organization of the forces which will be involved in a particular campaign. Operations in the Southwestern portion of the country would demand a radically different balance of forces than would operations in the Northeastern section of the country. Under the varied conditions where American arms may be called upon to protect national interests, it is well that the country maintains a rational balance in her arms and services, rather than going to an extreme involving expense and special equipment for operations in any particular area. The organization of the American army of today appears in every way to fulfill this requirement.

Certainly, new scientific developments and our highly organized industrial facilities have placed a new face on war. However, recent armed conflict throughout the world is indicative of limited prospects for a quick and easy victory by means of machines alone. A wise people will continue to depend upon the power of its leadership and the brawn of its fighting men for real success in any coming struggle. Cavalry has always been and will continue to be an important element in the brawn of combat.

An attack by Mechanized Cavalry.

A Mechanized Night Ride

By Lieutenant Forrest H. Riordan, Jr., 305th Cavalry

The problem of providing interesting and practical inactive duty training for reserve officers is exceedingly difficult. Conferences and map problems are apt to be a bit dry and of doubtful benefit to any except the officer who prepares the material. Instruction which introduces the element of competition is usually highly productive in that the participants, spurred on by the competitive urge, put forth all of their energies and thereby achieve results that would be otherwise unattainable.

With these thoughts in mind and recalling how interesting and practical the National Guard and Reserve Officers' night ride had been at Fort Riley, I considered the possibilities of such an event for the officers of the 305th Cavalry. Checking off the various points in favor of the idea, I became increasingly enthusiastic.

More practical experience can be obtained from a few hours spent in scurrying around the countryside after dark, hunting for a particular spot indicated on a map, than from many lectures on map reading. It is this type of experience that will stand us in good stead when we are ordered to proceed with a horse or a car or a command to some definite location indicated by a marked map or overlay. From a training standpoint this would be more than a mere junket, and the spirit of competition, the desire to win, and the opportunity to "talk it over" afterward around the bar of some congenial tavern would be certain to draw a good crowd.

Due to the location of our regiment in Philadelphia and to the impracticability of securing mounts for such a foray, my thoughts turned naturally toward mechanization. Nearly all of the members of the regiment own automobiles and by *assigning two men to a car,* the problem of "mounts" was settled. The terrain in the vicinity of the city is particularly well suited for this type of maneuver. The country is hilly and the main arterial highways are interconnected and criss-crossed with a road net that leaves little to be desired.

Colonel Arthur H. Wilson, our unit instructor, approved the plan, so armed with a Chester Quadrangle of a Geological Survey Map, I set out one Sunday afternoon in February to locate the stations. The portion of the quadrangle map illustrated above shows the locations which were selected as well as the Media Inn which was to be the start and finish point as well as the base of operations. The points selected were near roads not ordinarily traveled and it was highly probable that even to those familiar with the countryside, not more than one of the four locations would be immediately recognizable.

The following week-end I drove over the course after dark in two hours time and the speedometer showed that the shortest route measured 45 miles. This was a cause for concern as a too difficult course might discourage the contestants. Therefore, the original plan of superimposing the military grid on the map and locating the stations by giving coördinates was discarded, and it was decided to mark the maps which were to be issued to each car crew.

Three officers from other reserve regiments as well as our own regular army sergeant major were corralled to man the stations. They were to use their own cars and park from 25 to 150 yards off the road with their lights on "dim." A troop guidon was to be placed in the front bumper of the car in order that the "station" might be distinguished from couples parked about the countryside. This subsequently proved a wise precaution. However, the elimination of all lights would not make the stations too difficult to find and has been suggested for the future.

In order to insure that each station was at the exact location as marked on the map, I planned to personally conduct the station men to their positions. This caused an unfortunate delay in starting and clearly brought out the weak point of the problem. The time and space factors involved make it impossible for one man to do a smooth and efficient job.

The schedule was set up in the following manner:

En route to Media Inn the man at station 1 was to be shown his exact position.

Dinner served at the Inn at 6:00 PM.

At 6:45 PM I would take stations Nos. 3 and 4 out, place them, and return to the Inn by 7:30 PM.

Maps would be issued at 7:35 PM and the teams started out one minute apart in reverse directions (order of stations 1-2-3-4 for even numbered teams and 4-3-2-1 for odd).

Station No. 2 would then be taken to its location.

All stations would close and return to the base of operations at 11:30 PM.

Each team was provided with a 3 x 5 card with spaces for their names and their official starting time, spaces for signatures of the station men and for the time at which each team reported. In order to prevent mistakes and misunderstandings, the station men had an 8 x 11 inch form pasted on heavy cardboard which was to be signed by one contestant of each team and on which the time that they reached the station was to be recorded. Everyone was required to wear uniform in order to forestall any trouble with the police due to actions which might appear suspicious.

The actual working of the problem varied somewhat from the plan. First, due to delay in getting away from the office and as every action was timed to the split second, I did not arrive for dinner until 6:20 PM and was unable to move out for the placing of Station Nos. 3 and 4 until 7:15 PM. Too little time had been allowed to place

STA #1
STA #2
STA #3
STA #4
NEWTON
MIDDLETOWN
PROVIDENCE
CHESTER
Scale
Miles
Kilometers
Contour interval 20 feet
Datum is mean sea level
APPROXIMATE MEAN DECLINATION 1907
MAGNETIC NORTH
TRUE NORTH

these stations and further difficulty was caused by a road which the highway department had closed a few days previously, so the teams were not started until 8:50 PM. As a result it was decided not to place station No. 2 as there might not be time to complete all four stations. A glance at the results will show that the omission was needless and that of the five teams that finished in less than two hours, four of them could probably have covered No. 2 and completed the course before midnight. A further result of dropping Station No. 2 was that the course now slightly favored the teams traveling in the order 1-3-4, in that it was easier to go from No. 4 to the Inn than from the Inn to No. 4, while from the Inn to No. 1 and vice versa were about the same degree of difficulty. The analysis of the results brings out this point rather closely.

The event as a whole was highly successful and the current opinion is that it should be held annually as a part of our regimental training. The winners were awarded map measurers for their efforts and were elected to put on a similar show next fall.

Winning teams were:

1. Captain Morrow and Lieutenant Read. Elapsed time: 1 hour, 14 minutes.
2. Lieutenants Stretch and Davisson. Elapsed time: 1 hour, 35 minutes.
3. Lieutenant Renninger and Pvt. McGroarty. Elapsed time: 1 hour, 39 minutes.

The success of this type of problem depends on two basic principles. First, care must be taken that none of the contestants has any advance information as to the locations of the stations, and second, the stations must be as near as humanly possible to the locations given on the map. Of course, the selection of a good hostelry for the center of operations serves as an added inducement and attracts a larger crowd.

Cavalry in Poland*

"The Polish Army is the only one in Europe that has retained a large number of cavalry. Its cavalry, called 'cavalry of the line,' has a strength of thirty-six regiments; twenty-seven of lancers, three of light cavalry, and six of mounted chasseurs, distinguished by the color of their cap-band. All this cavalry is permanently on a war footing; only the divisional cavalry mobilizes.

"If the cavalry wishes to remain cavalry, however, it must use both fire and movement as its weapons, fire being not an end but a means for executing its maneuvers. Armored cars, anti-tank guns, light tanks and anti-aircraft artillery are meant only to facilitate these maneuvers by covering against surprise on the ground or from the air. In the opinion of the Polish military chiefs, cavalry will tomorrow rediscover those qualities of decision which the great war took from it, provided always that it changes its method and field of action.

"The view expressed at staff headquarters and among the regiments was that aviation had released cavalry from its exhausting rôle of reconnaissance, which often made it incapable of playing its part as a shock weapon at the decisive moment. Kept informed in its turn from the air, it will be able to throw all its forces into battle active and fresh when the moment has arrived for forcing a decision.

"But it will only be able to obtain this decision if it maneuvers on a terrain different from that on which it has been used hitherto. Whereas formerly it looked for open territory suitable for making a charge, its object today is to maneuver in territory that is covered and difficult and will give it superiority over both infantry and mechanized forces.

"This Polish theory is no doubt suited to a particular kind of terrain lacking roads, intersected by woods and lakes, and sprinkled with marshes, and of a width which excludes a priori every possibility of establishing a continuous front. The doctrine is again conditioned by the wealth of the country in horses, a wealth which makes up for so poor a development of industrial resources as is not propitious to extensive mechanization. Poland possesses 3,950,000 horses classed as fit for military service. The remount commission's only requisition, on an average, five horses from each lot of 500 examined. All in all, the Polish cavalry has available a remount strength of eight horses per man."

*New York Times Dispatch, dated London, June 25, 1939, and written by Robert Leurquin, Belgian Military Expert, on the subject of the Polish Army.

Accompanying Aircraft

By R. G. KELLETT*

In the past, Army Coöperation work has been effected by one general, all purpose type aircraft, the Observation Plane.

Due largely to developments in the material and equipment used by the Ground Troops, as well as changes in tactics, increased mobility, etc., it is generally recognized today that to attain the full potential assistance which Aviation can give the Ground Elements this single type aircraft will not suffice.

In addition to the Observation Plane of the type noted above, there has arisen the need for an aircraft which can, to be of greatest benefit, live with the ground elements to which it is assigned. Its relationship might well be considered in the same light as that which an "Accompanying Gun" bears to the tactical infanrty unit to which it is assigned.

It is the purpose of this article to outline some of the missions which such a craft would be expected to fill and the characteristics it should possess to best accomplish its job.

An ideal aircraft for this purpose would be one which could be assigned to the Tactical Unit, be capable of accompanying the unit while on the march and have the ability to land and take off beside the column during halts, or at any position that the accompanied elements may occupy. It should fulfill the maximum desired missions, irrespective of existing weather conditions, require minimum ground crew, and should lend itself to quick concealment under same type of cover as available for tractors, trucks, etc.

Since this aircraft is accompanying relatively slow-moving ground elements, its high speed is important only to provide protection from air attack (which maneuver will usually be a rapid descent to or near the ground), and to properly perform its mission against head winds.

Because it must operate from extreme advance areas, battery positions, etc., it must not require runways of any sort. This is essential not only because of the labor and time involved in their construction but also because this type of work shows up readily on aerial photographs.

In order to fulfill the above mentioned general characteristics, the following detailed requirements should be taken into consideration:

Take-off and Landing—In order to operate from any terrain (woods, of course excepted), the aircraft should be capable of landing and taking off without any roll whatever. The landing and take-off should preferably be nearly vertical up to a distance of at least a few feet above the ground and angle of climb thereafter ample to clear higher objects. In order to get out of a very steep ravine, etc., the machine should be capable of climbing in a tight spiral immediately after take-off.

Minimum Speed—For observation purposes, the aircraft should have a minimum speed sufficiently low to permit hovering at altitude under average wind conditions. In this condition of flight the aircraft should be stable and free from vibrations or sudden changes in altitude. For observation or reconnaissance close to the ground, at altitudes of 100 feet or less, the aircraft should be capable of maintaining level flight with safety at not over 20 miles per hour.

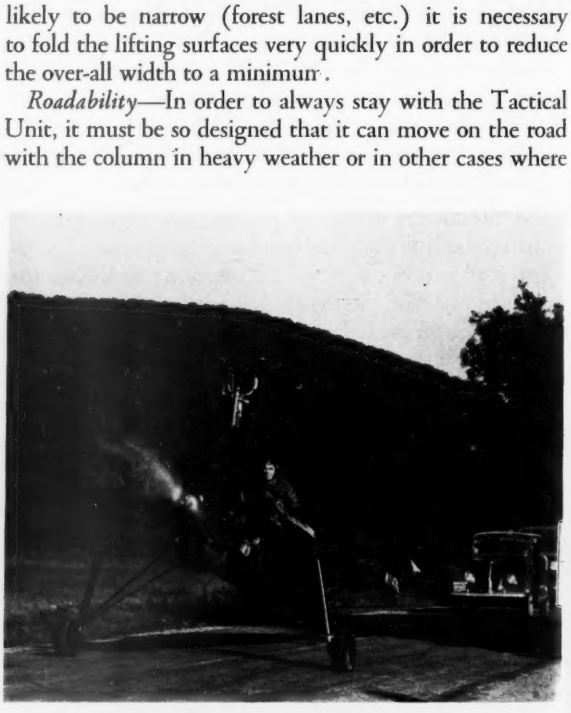
Climb—The rate of climb should be sufficient to attain the desired observation altitude in reasonable time.

Maneuverability—Because of its relatively low speed compared to that of a combat airplane, it should be extremely maneuverable.

Top Speed—The top speed should be sufficiently high to permit the aircraft to accomplish its missions within a reasonable time and return to its base under all wind conditions. It should have ample margin over the speed of the ground elements traveling on the road regardless of the wind direction or velocity, for example, it may be necessary for the aircraft to travel considerable distance from and return to a moving column in order to transmit messages or make observations. In these cases, it will be necessary for the aircraft to have a sufficiently high cruising speed to complete its mission under adverse high wind conditions in a minimum of time.

Concealment—Since entrances to available cover are likely to be narrow (forest lanes, etc.) it is necessary to fold the lifting surfaces very quickly in order to reduce the over-all width to a minimum.

Roadability—In order to always stay with the Tactical Unit, it must be so designed that it can move on the road with the column in heavy weather or in other cases where



Accompanying aircraft in march column under own power.

*President, Kellett Autogiro Corporation.

Preparing to land on a dime.

this is desirable. If it can do this under its *own power so much the better,* but its flight characteristics must not be handicapped by the inclusion of this feature. Here again the matter of folding the lifting surfaces is essential; the closer the width can approach that of a truck, the better.

Dependability—Ground operations follow a predetermined schedule and are not subject to change with weather conditions. Therefore, this aircraft should be capable of operation in all weather conditions so far as possible in order to fulfill the greatest number of the desired missions. High wind conditions should not stop operations.

Crew—The aircraft should carry a *pilot and observer.* Since these two, together with the ground crew will base and live with the Tactical Element, the ground crew should be a minimum, preferably two, not more than three.

Visibility—The ideal visibility would be one in which the pilot and observer have 100% visibility of the terrain and sky in all directions in all altitudes of the aircraft.

Silhouette—Since this aircraft will operate at relatively low altitude and will possibly be susceptible to enemy ground fire under certain conditions, its visibility from the ground should be a minimum and it should offer a minimum target.

Endurance—This should be sufficient to permit the completion of the tactical missions to which the ship might be assigned without having to withdraw to refuel. Two and a half to three hours should normally suffice when at the front. Consideration could also be given to having reserve fuel capacity which might be utilized for cross-country work where some equipment would not be required and could be removed.

Reliability—The aircraft should be sufficiently rugged to operate from rough terrain and in normal operation require only the servicing which could be given by the minimum ground crew heretofore mentioned.

Communication Equipment — This aircraft would probably operate in close proximity to the unit to which it has been assigned. Therefore, a low capacity two-wave radio having a range of 25 miles or more should suffice. Supplementary signal equipment, which could be used in the event the radio equipment is made ineffective, is desired.

Pyrotechnics—In order to make the aircraft available for night operations, pyrotechnics should be included. Because of the low speed characteristics of the aircraft, landing flares of short duration should be sufficient.

Photographic—The scope of utility of the aircraft may be broadened, if it is provided with provisions for oblique photography. Since the aircraft is not primarily designed for map making, it need not be arranged for vertical pictures, *though of course, this would be beneficial.*

Armament—The normal operation of the aircraft at the front will generally be restricted to the area occupied by the accompanied Tactical Unit; therefore, its defense against enemy aircraft can normally be arranged by strategically located antiaircraft equipment on the ground. Additional protection can be provided and the field of utility broadened, if the aircraft *can carry a fixed gun.*

EDITOR'S NOTE: It would appear that the only aircraft, now available, embodying these characteristics is one involving the principles of the autogiro.

A complementary subject involves the source from which pilots and observers of this type aircraft should be drawn; that is, from the Air Service or the arm with which the aircraft serves.

The Modern Seat

By Lieutenant W. W. Culp, 4th Cavalry

Approximately five years ago, in the May-June, 1934 issue of The CAVALRY JOURNAL there appeared an article on the modern seat by the then Major Harry D. Chamberlin, 14th Cavalry, Captain of the 1932 United States Army Olympic Equestrian Team. This article was so clearly understandable and of such import that this writer saved it and penned in its margin, "possibly the best short article on the 'Modern Seat' ever written."

The present writer is attempting only a discussion and with no effort or attempt at plagiarism, is quoting sentences, thoughts, phrases and observations from the article of Colonel Chamberlin, a horseman of varied experience, "horse sagacity," and ability—as well as an author of a well earned and established reputation.

This article is occasioned by an extreme interest on the part of the author, by certain experiences in the past, observations of his own and others, by discussions with others, and certain teachings, observations and discussions garnered under the instruction of many capable officers and horsemen well known throughout the country—among them instructors at West Point, in the Cavalry Division at Ft. Bliss, Texas, in the Cavalry School at Ft. Riley, Kansas, and Captains and members of various United States Army Equestrian Teams. Acknowledgment should properly be given to many others, with and without reputation—which is but a poor thermometer or gauge of ability in horsemanship.

Note: It is not the intention of the author to maintain that all or *any* of the above-mentioned shall concur in all of the points of this article. It must be borne in mind that this is but a *discussion*, good, bad, or indifferent.

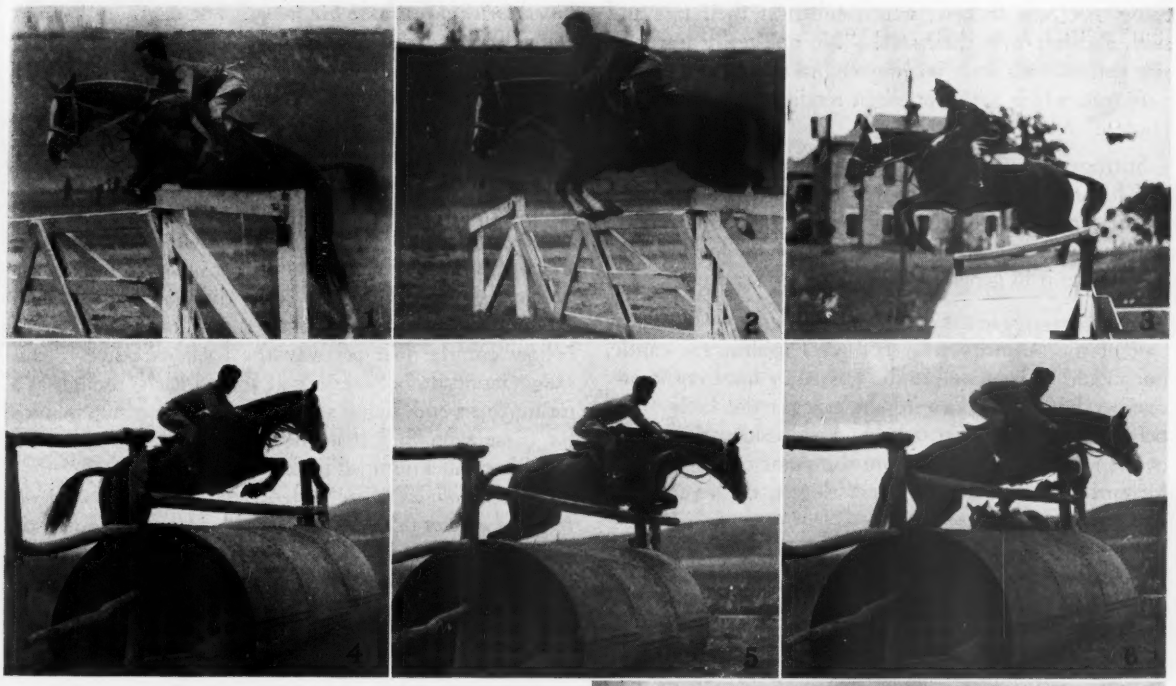
* * *

Form is *more* essential in riding than in any other branch of athletics, if a horseman expects or hopes to excel. In most athletics, from a standpoint of form, the contestant has but himself to consider, whereas in any horsemanship event—competitive or otherwise—the rider, in addition to himself, must consider that more important member of his *duet*, the horse. The *freedom* of the mount, the mount's ability, temperament, disposition, endurance and breaking point, are constantly in mind—otherwise the rider is no *horseman*. Many shattered records in all forms of sports—the height of obstacles easily negotiated by riders and horses in modern international jumping competitions—bear witness to the value of mechanical perfection of movement.

The "forward" seat, as properly taught by the Cavalry School, United States Army Horseshow Team, and Colonel Chamberlin—and exemplified by him—cannot be questioned. It has proven itself, and has for years been proven by many horsemen, both here and abroad. Destructive criticism of the seat is usually occasioned, not by any intrinsic fault of the position, but rather by a lack of a thorough understanding of its name, the seat itself, and its *many and varied* applications and *degrees*. In its varying degrees it is an *all purpose* seat, suitable and highly adaptable to all forms of riding: cross country, hacking, drill, "schooling," cross country and show jumping, hunting, and racing over obstacles.

Unfortunately, there exists in the United States a dearth of understanding of the "forward," or modern seat. Even the most accomplished horsemen—of which there are, sadly, too few (in spite of popular opinion to the contrary)—confuse almost any grotesque or bizarre attitude, where the rider is humped forward, with the well established and proven seat, of this and many other countries. The military riders of many nations are now proving, and for years in the past have proven and demonstrated it in local and international competitions; likewise, *many* civilian riders frequently use it in many forms of equestrian sport, possibly without actually realizing it. Many riders who use the above mentioned "humped" attitude would (and probably do!) experience great difficulty in controlling and guiding their horses while jumping were the jumps not enclosed by enormous wings and the arena by a fence; too frequently they "throw the reins slack," support, or balance themselves with their hands on the horse's crest, and at some stage of the jump "take up" the reins suddenly with a resultant "bump" on the mouth, and "flop" their weight almost resoundingly back into the saddle, thus delivering a blow to the horse's loins. Likewise, too frequently the rider humps forward and with a *short* rein fixes the hands on the animal's neck, thus denying him freedom of head, neck and shoulders. The shoulders are the horse's natural shock absorbers! The above faults produce many other results, too numerous for the scope of this article.

It is obvious—only reasonable—that a horse, after accustoming himself to the weight of man, can far more easily, smoothly, calmly and efficiently support that weight, and more easily and freely negotiate obstacles when allowed to carry his head and neck in the normal "outward" position, than when the rider draws in the head and neck with bits. Likewise, it is just as reasonable that the horse can perform with much greater ease if the rider maintains the center of his own mass directly over that of the mount at all times; this naturally entails a slight forward inclination of the rider's upper body, the degree of inclination varying directly with the speed of the horse. At this point, it is noteworthy that in jumping, obviously any sudden "lurch" or "thrust" of the rider's weight forward will upset and unbalance the horse, probably resulting in no jump (refusal) or a faulty or danger-



1—Horse has engaged haunches, has made the thrust, has impelled rider's upper body forward, and is about to leave the ground entirely. 2—Horse just beyond highest point of jump, in early stage of descent, upper body of rider still forward and inclined from hips. 3—The rider's position from the knee down should not vary, inclination is from the hips, weight down into heels; horse and rider relaxed. 4—Horse approaching highest point of the leap in good form; note rein contact controlling and steadying horse. 5—Horse in difficulty but in good form; note rein contact and line from rider's elbow to fit; also note extension of horse's head and neck. 6—Rider "standing" in stirrups resulting in loss of contact with saddle, excessive elevation of seat and inclination of upper body; note horse's head and neck, rider's hands. 7—Rider "behind his horse," seated too deeply in saddle, impeding freedom of horse's loins and maximum elevation of haunches. Compare pictures 6 and 7 with other pictures with respect to proximity of rider's seat to saddle.

ous one. The rider "with his horse," center of mass and equilibrium over that of the animal, sitting still, not "bothering" the mount, letting the horse "do the work" and permitting the engagement and thrust of the haunches to impel the rider's upper body smoothly and uniformly to the front, will more frequently than not, result in a jump, pleasant and comfortable for both. In this connection, it is very desirable and almost absolutely essential that the horse be "on the bit" to jump properly. A discussion of "on the bit" is beyond the purpose of this article. Suffice it to say, this condition implies that while "unafraid" of the bit (rider's hands!) the horse "respects it"—has confidence in it—is willing to go up to and *against* (not beyond!) it, and relies upon *support* from it without "taking it to town" in a runaway. The desirable extent or degree of this condition, "on the bit," naturally varies with different animals and the character of the riding. While jumping, the writer has, on occasions, found it desirable to have certain horses strongly on the bit, and certain others, lightly so; likewise, in exceptional cases it may be found advisable to have the horse strongly on the bit, the rider evenly and progressively *diminishing* but never *relinquishing* the intensity of rein contact with the approach of the horse to the obstacle. (Of course *maintaining* the smooth contact up *to, over,* and *beyond* the jump. Few riders really have "hands," for few possess sufficient balance, security and coördination to prevent harmful and unnecessary movement of their bodies while riding!) Suffice it to say that after negotiating the obstacle, contact with the saddle should be resumed smoothly, evenly, gently and without shock, *after* the horse has landed and is *beyond* the jump.

Many old horsemen have forgotten the "open mind," dislike to change methods, possibly through fear of their inability to grasp new ones! Many enterprising and enlightened horsemen know and apply the obvious advantages of the modern seat; they are glad to learn some-

thing, not now so new, which enhances their tact and skill, and improves their seat! "No one really learns to ride perfectly for there is always room for improvement."

A seat, which with but slight modifications, is an "all purpose" one:

Stirrups: Sit squarely in the middle of the saddle with feet out of the stirrups and let the legs hang down naturally. If the tread of the stirrup is from one to two inches below the point of the ankle bone, the length is in general correct for normal riding.

1. *Sit squarely in the middle* of *the saddle*.—The fleshy part of the buttocks must not press against the cantle, but should be kept well to the rear; they must not in any manner be pushed forward underneath the body. The pelvis bones should rest lightly on the saddle; the weight of the rider is distributed from the point of the buttocks forward to the crotch and inner thighs, thence to knees and down into the heels.

2. *The thighs, resting without constraint upon their flat sides extend downward and slightly forward.* They must clasp (without constraint!) the horse evenly.

3. *The knee joint is relaxed; the knees are bent without stiffness and rest snugly* (without gripping!) *against the horse.* Under no circumstances should the knee change its place; the knee joint, supple and relaxed, acts as a free, well oiled hinge.

4. *The calves* or *lower legs should extend downward and slightly to the rear.* They should contact the horse *without pressure,* except of course when used to change pace, or when horse attempts refusal, etc.

5. *The heels are well down with the broadest part of the ball of the foot resting on the tread of the stirrup.* The toes should be turned out naturally, about 30 degrees from the horse's side. The ankle should be without stiffness; it should be flexed so that the heel is well below the toe, but no effort should be made to depress excessively the ankle bone inward, which stiffens the ankle and tends to turn the calf and flat side of thigh away from the horse. Force the weight down into the heels; stretch the tendon in rear of the ankle as much as possible; feel that with the whole foot steadied and supported by the stirrup, the weight comes *through* the ankles *down* into the heels. All the above is necessary, else the rider's seat and legs are weak due to inability to control or contract the calf and lower muscles.

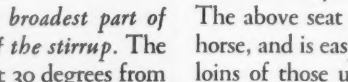
6. *The upper body with spinal column (especially the small of the back) easily erect and supple should be inclined forward from the hip joints.* The degree of inclination will vary, depending upon the character of the riding, the speed of the horse and the length of stirrups, etc. Suffice it to say, the upper body should never be in rear of the vertical, the back should be straight without stiffness, the "shuttling" movement and shock (experienced by the rider while the horse is travelling) should be "absorbed" or "taken up" in the suppleness of the small of the back, and the forward inclination increases with increased gaits and with shorter stirrups. The proper inclination from the hip joints helps greatly to keep the heels, knees, and thighs properly placed. No attempt should be made to hollow out the loin or sway the back excessively; this exaggeration is not necessary as an end itself, though as a means to an end, i.e., a straight back, it is recommended for those who find that they are riding with rounded shoulders and a humped back.

7. *The shoulders are squared without stiffness, arms free and elbows fall naturally by the side;* under no conditions should the elbows be in rear of the body, for then the reins are too long. Preferably, they should be a little to the front, with a straight line from elbows to the bit.

8. *The chest and head are raised—this tends to keep the back and upper body in the proper position.*

9. *The eyes are up and looking to the front.* Do not constantly look *down* at your horse, this lowers the chest and humps the back; if you desire to see some reaction of the horse, glance down with your eyes but not with your head, chest, shoulders and back. The poll will remain in position without watching!

10. *Relax from head to heel and let nothing stiffen.* The above seat is comfortable and easy to both man and horse, and is easy to acquire, though at first it may tire the loins of those unaccustomed to it. Once acquired, both rider and mount will last much longer than the man who leans to the rear and the horse which supports weight on his loin; the seat permits and lends itself to the free, easy and efficient use and application of the aids in the control of the mount. NOTE: Length of stirrup varies with conformation of rider and horse, as well as with character of riding. Suffice it to say, using an extremely long stirrup for high school work and riding a young colt, the length is progressively shortened in order for the following sports: hacking and normal riding, cross country and steeple chasing, show jumping, and flat racing. Many are the reasons for the above, such as, speed of the horse, stability of rider, ability to efficiently apply aids, etc., all of which are obvious to enlightened horsemen.



What's New in Marching?

By Major Harold E. Eastwood, 9th Cavalry*

This article appears solely because Ye Editor, from the safety of distance, asks the question, "What's new in marching?" knowing full well that there has been nothing really new in marching since Napoleon confounded the warlords of Europe by increasing the marching cadence of his armies from seventy to one hundred and twenty paces a minute. Since that time marching has been changing gradually, in small particulars from time to time, and these changes have been so infrequent and imperceptible that never have they created the impression there was something "new."

Such has been the manner of the changes in marching of cavalry, which have taken place as we have progressed in all those other matters of our development. There have been a number of changes in methods, of course, but none have been so revolutionary or startling in character that they were called "new." The stamina and endurance of our horses have been proved and improved, but over such a period of time that the fact that we expect them, under stress of necessity, to make, without difficulty, marches which a number of years ago we would have regarded as next to impossible, fails to impress us as anything "new."

Our final recognition of the fact that our horses trotted more easily at nine miles per hour than at eight may have at the time been considered as new, but was it? Wasn't it just a belated official recognition of a condition which we had been taking advantage of for some time? In any event, it is not new at the present time.

Oftentimes throughout the cavalry service we hear the remark "They are doing it this (or that) way at Riley now." And some of the things Riley is credited with doing would rival the imagination of Alice in Wonderland, whereas in reality there are very few things done differently at the Cavalry School than elsewhere in our arm. I refer, of course, to methods taught students as being standard practice; there are many experiments conducted by the Cavalry Board, but changes are not accepted and adopted as standard practice without going through the necessary trial and scrutiny to determine their soundness, after which the Chief of Cavalry must give his approval of their adoption before the dissemination of the information by his office.

And so it is with marching. Nothing new or startling has been discovered. Marches are conducted by the school troops largely as by our other units. Paragraphs 294 to 316 of Volume III of the *Cavalry Field Manual* constitute the guide used in preparation of all march problems and exercises. If this guide were followed generally throughout the cavalry, we would hear fewer and fewer remarks such as "They do it so and so in the —th," "so and so" being generally a different method than that followed in any other regiment, and one which, if examined closely, will usually be found to be a method peculiar to the then commanding officer of the regiment. It is these "individual" methods which prevents the cavalry's having a standardized march procedure used in all units, but that is not as important as it may sound. Certainly if the general guide is followed, small differences in manner of performance or technique can have but little real importance.

With the idea that there may be some points in connection with marching as conducted by the Cavalry School which may be of interest to others as indicative of what they are doing at Riley, or for comparison with methods used by units elsewhere, we will discuss some of the different phases of marching.

First, why should we ever make a march, except in the most inclement weather or to condition and train recruits and remounts, without its being a tactical march? Just going down the road, from county fair to county fair, offers an opportunity for tactical training which should not be overlooked. Truly, it will require more work and imagination than is required in making "just a march," but it is worth it.

Planning our march in all its stages is the most important thing we have to do. This would not be the case were it not for the large special duty rosters, administrative use of transportation, and many other strength-sapping details of our ordinary garrison life. It all means that planning becomes the most important item of a march—planning to have the maximum number of men, planning to have sufficient and serviceable transportation, planning the system of supply to be used (the recognized system can rarely or never be used in peacetime training because the Quartermaster generally does not have the time, funds, personnel, nor equipment to do his stipulated part). The selection of routes, arranging for camp sites, and other such matters, once the march is under way are minor details compared with tearing a unit out by the roots to get it started on the march.

Conduct of the March

Most important of all the single items contributing to the success or failure of a march is "march discipline." March discipline consists of so many different factors, all in themselves more or less insignificant but as a whole very important, that a full discussion of them would be interminable. One may find certain factors dealing with this subject discussed in *Cavalry Field Manual,* Volume

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Leading on the march.

III, paragraph 315. Consider the item of adjustment of equipment at the halts. For that matter, how often do you see men in pairs saddling horses when saddles are fully packed? Is there any one item of march discipline which has more bearing on the condition of animals after a march than this one of adjustment of saddle equipment? Yet we often see one man (small, perhaps) trying to lift a fully packed saddle to the back of a good-sized horse that frequently results in maladjustment of equipment that is not corrected until the damage is done.

Change of gaits is an important item of march discipline. Executed properly, all subdivisions of a marching column will change easily and without undue fatigue or injury to animals or men. Look at the column after three or four hours of marching. The chances are even that trots will be picked up largely as a stream of water first passes through a hose, but that is nothing to the contraction which will occur in the same unit when it next comes down to the walk. Then arises the danger of torn heels, or collisions with passing motor traffic due to uncovering by successive units.

The manner of giving commands, whether by voice or signal, has a great deal to do with the proper changing of gaits. Where signals are used correctly and exclusively, there generally will be found a quiet but alert organization executing their commands in unison. On the other hand, when the voice is used exclusively (in daylight marching) the giving of commands becomes, like the protection of Frederick the Great's convoys, the principal business. Execution is more or less left to the other fellow. Under this condition, opening and jamming of the column is usually well demonstrated.

Opening and jamming are not only dangerous, but fatiguing, and this in turn has a direct bearing on still another item of march discipline—slouching in the saddle. It is so much easier when tired (as one officer gave as his reason for prefering the McClellan saddle for officers in the field) "to rest for a minute against the cantle" than to sit squarely. But the trouble is that the minutes become long and frequent as that tired feeling increases. That is the period when the officers themselves must be more alert than usual, particularly if units are on a march of several days' duration.

Starting a march has a good deal to do with its running smoothly and finishing well. It is a common thing to see whole troops or squadrons completely saddled a half-hour or more before they can possibly move under the march hour published. This is tiring on the horses, and it is needless. On the other hand, we have seen the other extreme, where units have been forced to take up a trot, and in some cases the gallop, to arrive at an initial point on time. And the correct practice is so simple—just a small detail of time and space computation.

Shakedown periods at the start of a march are more necessary to a satisfactory condition of animals than some are willing to admit. Only the most urgent tactical situation should be allowed to prevent starting a march with a shakedown. Paragraph 311, C.F.M., Vol. III, in the examples covering timekeepers' records, indicates a shakedown in the first hour's march. It will be noted the record indicates a twenty-minute walk at the start of the hour, a longer period than necessary on ordinary terrain. The idea of the shakedown is exactly that—"shake down"—and any march which will accomplish that, with a reasonable halt period, is all that is necessary. A good one, and one which will permit getting on the regular rate earlier.

is to walk ten, trot five, walk five and halt ten. This half-hour will do all in the nature of a shakedown that the full hour does, yet it does not start with a long and tiring walk period, and the shorter time devoted to it will prove a big help in maintaining the rate of six or six and a half miles per hour for the march.

Why are advance guards so often required to gain distance by increased gaits? Having them clear initial points a sufficient time before the head of the main body is due to pass that point will allow their larger sub-divisions to gain their required distance at a walk. From that time, on, the regulation of their march on that of the main body is accomplished with normal walk and trot periods. When required to gain distance at increased gaits, the first hour's march for elements of advance guards is generally quite hectic before all reach their proper places.

Paragraph 41 of Volume III, C.F.M. covers the matter of the body which is to regulate the rate of march. In most instances (in daylight marching), commanders seem to prefer that the main body regulate the rate of march and the advance guard maintain contact with the main body. Yet in practically every march made, the movement of the main body is dependent on the information gained by, and the actions of, the advance guard. Why not change the habit and relieve the advance guard commander, whenever possible under the situation, of the necessity of continuously "looking over his shoulder" to conduct his march? Make him responsible for the rate, route, and security of the march and his hands will generally be full. In this way, with command cars at the head of the column, it is easy for a column commander to get word to the advance guard commander to increase or decrease the rate of march, if desired.

On night marches the advance guard should always regulate the rate of march, the main body "following." Using the alternate method of the advance guard "preceding" the main body will produce a well-nigh impossible situation in the conduct of the advance guard. And the yelling and shouting which connecting groups must do to pass the word "UP" of changes in gaits would make a Comanche war dance sound like a peaceful evening at home.

Many seem to be in doubt as to who puts out the connecting groups—the main body or the advance guard. Generally speaking, it would seem that the main body should maintain contact, if for no other reason than to prevent dissipating the strength of the advance guard in the use of connecting groups. Paragraph 42 *c* (1), Volume III, C.F.M., prescribes, as a principal function of the support, that it "maintain contact with the advance party." It does not prescribe that any element of the advance guard shall maintain contact with the element next in rear, or the main body. Certainly, the only time the advance guard should be required to maintain contact would be those occasions when the march order prescribes that it "precede" the main body. When the main body is "following" the advance guard, the intervening distance from the tail of the advance guard is a responsibility of the main body. Based on this responsibility, its agencies —"connecting groups"—should be the only ones to operate in the interval.

It is hard to conceive of marching under any system which does not make use of the squadron as a march unit and the platoons as a regulating unit. If we consider comfort of men and animals (and it is essential that we do), how can we improve on this method except by further reducing the size of the regulating units—which would disperse the column beyond all reason? But there are some "die-hards" who still argue that the troop should be the regulating unit, and some who even maintain that the regiment should be the march unit. So let's be thankful that paragraph 314, C.F.M., Vol. III, is directive in its provisions.

The facilities of march schedules, timekeepers, and pace setters seem to be utilized in many different ways. Their proper use has so much to do with a successful march that we will discuss them briefly, in the hope that some obscure points may be cleared up.

The most general understanding of a march schedule is that it is a "time schedule" prescribing how many minutes the column will trot at each trot period and how many it will walk. Such an understanding is unfortunately more or less supported by the examples of timekeeper's records in paragraph 311 of C.F.M., Vol. III, wherein one hour's record is shown as a regular application of the seven- and three-minute periods. A march schedule, on the other hand, is, the rate of march having been determined by order or otherwise, simply a schedule of the number of minutes' trot, walk, lead, and halt there will be in each hour. The reduction of these total trot, walk, and lead periods into the number and length of periods for each during the hour will depend on the terrain principally. If it is level country with excellent roads, then the trot and walk periods can be divided regularly throughout the hour. If the route is over rough and hilly country, or other conditions make marching difficult, the periods will necessarily have to be broken up to conform to the suitability of the terrain for the walk or the trot and no two may be of the same length. But the march schedule will have been complied with, because the total trot time will have been used for that gait.

The application of the march schedule is the big reason for having the timekeeper, in addition to his available assistance on the map. Some regimental and squadron commanders do not like to use timekeepers and pace setters. They seem to feel that they are delegating to them some part of command functions and prerogatives. Nothing is further from the truth. A commander of a regiment or of a march unit within a regiment has many duties while on the march which prevent his setting the pace or keeping a time record of the march. The same is true of his regularly appointed staff officers. No function of command is delegated to the timekeeper when he is put out in front and informed what the rate of march is to be and what the unit commander's wishes are with regard to breaking up the requisite trot and walk time to main-

Routine administrative march.

tain the rate of march over normal terrain. And when the going gets tough because of hills or other reasons, it is the commander who directs the changes of gait to fit the going. Then it is the timekeeper's duty to keep the record straight, no matter how many changes there are, and to be able to tell his commander exactly how many more minutes of trot he must use in any hour in order to maintain the rate. But all of us have watched march units trot up or down steep grades and over rough going simply because the commander would not use a timekeeper and he, or a staff officer, was keeping the time on his watch, and if he were to deviate from the regular trot time all his calculations would be thrown out of gear.

The duties of a pace setter and a timekeeper *can* be combined in one individual. There are reasons why it should not be done, though—company of horses is one good one. Two horses sent out in front of the march unit will, being in company, go well. The pace setter will have an easier job and he will do it better; the timekeeper will be concerned with time and records only. It is true that a commander with a well-gaited horse can set the pace for his column more to his liking, perhaps, than can a pace setter. But what happens when some of his duties take him away from the head of the column? Someone else with a different horse has to take over the job, at least temporarily, and the change generally results in changes in pace noticeable throughout the column. The same reasons suffice for not using a regularly appointed staff officer as a pace setter.

Every troop should be required to have two men, noncommissioned officers or exceptionally good privates, trained thoroughly in the duties of timekeeper and pace setter. If this is done and those from the leading troop are used, we will avoid using the same men for this purpose day after day, and also we will eliminate any feeling on the part of "B" Troop that "A" Troop is always setting the pace, and what a pace it is! And incidentally, either of these duties performed by a junior officer constitute excellent training for him.

Keeping on the route of march may offer some difficulties when it lies through rough terrain or is unusually crooked. If the route has not been previously reconnoitered, by far the hardest job in the column falls to the commander of the advance guard. And this is another reason for not making him conduct his march by "looking over his shoulder." But even when he "goes right" at some difficult turn, there is still the possibility that some part of the following column may "go wrong." This statement has more than just a truthful ring to it—and if the march is being made at night the "go wrong" has long odds under ordinary circumstances. In daylight marching it would seem that the timekeepers record and a map of the route should serve to keep any march unit on the road, and if a difficult turn is encountered about which there is doubt, an unscheduled halt to check up is more desirable than to take the wrong road. In some units squadrons send small detachments forward to march at the tail of the next forward unit, dropping men in pairs at doubtful points along the route.

In night marching neither of the above-described measures is completely safe, particularly during a night march requiring secrecy. The small detachment sent forward by one squadron to the tail of another will care for the leading unit of the following squadron, but what of some regulating unit (platoon) which may for some reason have lost considerable distance? Should it go astray it will take all of the following units with it. Or what about some field artillery unit which may be in the column, or the medical and veterinary detachments which usually march at the tail? They should all feel that the route will be clear to them without any unusual pathfinding on their part.

A good measure which provides the maximum of certainty is to use what might well be termed "route guards." By consulting a map of the route in the event a reconnaissance has not been possible, a column commander can judge the approximate number of "key" turns which will be encountered during the march. Take a detachment such as a platoon or a troop if necessary, in charge of an officer, sufficient in number to provide at least two men for each "key" turn, from the last unit in the column, and march them at the tail of the advance guard. As this unit passes each road fork or other place where

confusion may occur, the officer in charge drops off two men who remain at the point until the entire column has passed, joining the tail of the column as it passes. There is nothing "new" about this—simply an extension of the principle of each squadron using a small detachment which was generally from the leading unit of the squadron. That it serves to protect all of the column, even the head of the main body, is its best feature and one which by itself is enough to justify its use in preference to the other. This system was used for a night march under conditions of secrecy at the school this spring, and over a crooked route through rough terrain. There was no element of the column in doubt for so much as a moment concerning the right road.

Leading is another matter always productive of argument. Every one will agree with the idea of leading into a halt. But when it comes to leading out of a halt, or in the middle of the march hour, there is considerable basis for argument. Leading into a halt has all the advantages of resting man and horse while still gaining distance and permitting an adjustment of equipment at the end. Leading out of a halt, or in the middle of the march hour, however, is a horse of a different color. At the termination of these latter leads mounting is a hurried operation, because we must not lose time. The result, when marching with full packs, is disarrangement of equipment more often than not, and this disarrangement will continue until the next hourly halt before it can be corrected. At the school, leading out of the halt is no longer the usual practice, and leading in the middle of the hour has not been taught for many years. It would seem the reasons for discontinuing both of these leads are sound.

If we need a reminder, paragraph 312 of C.F.M., Vol. III, provides it in sub-paragraph *d*, when it tells us "the great weight carried by the cavalry horse is his worst enemy." And this is one of the vital reasons why we should always go on marches with our full complement of unit transportation. If we do and the supply system bears any reasonable semblance to the one prescribed, and our transportation is loaded with authorized equipment, there will be available room on the trucks for the cantle rolls. This room should be used for this purpose on every possible occasion. By so doing, the cavalry will be able to increase its mobility by increasing the length of the day's march, and when necessary the rate can be increased over greater distances. Means and methods of increasing mobility should be the object of constant search on our part. The loss of the light wagon, trailer type, without replacement, in the new cavalry tables of organization, may, because its load must be placed on trucks, serve to deprive us of this aid to our mobility, just as we were becoming accustomed to using it for that purpose.

The same paragraph, 312, warns us about long walks and excessive trot periods. A fifteen-minute walk is deadly on both man and animal. It tires the man unmercifully during a day's march, and it prolongs unduly the time a horse, riding or pack, must bear its burden. From long experience it has been found that a trot period in excess of seven minutes is harmful to the horse carrying a load. The statement that frequent changes in gaits freshen both man and horse, besides increasing the rate of march, is based on fact also. Still it was not so long ago that march schedules provided for five walk and five trot, or ten of each. But the change to short walk periods and double or longer trot periods, as in three and seven, is not new. We have been marching that way ever since we were boys. A former regimental commander of the writer put it very simply by citing the small boy going to a fire—he runs a couple of hundred yards, then walks for ten or twenty, and again starts to run, continuing this "frequent change in gaits" until he arrives at the blaze. The example is a good one, and our march schedules of today follow it in principle.

There is one phase of marching a cavalry unit which is generally passed over with very little thought or consideration: marching the trains. In practically all cases the march order will read that combat trains will march grouped under the supervision of the S-4. And that is the end of it with most of us. The next time we think of the trains will be when we see our tents up and waiting for us when we arrive in camp. Yet those trains and the way they march are a vital concern of ours. They normally carry some rations and grain besides equipment, all of which will be needed, but aside from that in tactical situations they represent a hazard to us.

The cavalry trains today have certain armament which will go far toward their protection in chance encounters with hostile detachments, but their capture and destruction would cause us discomfort, at least for a considerable time. The most significant thing about the trains, however, is that they are so easily distinguished by hostile observation, day or night, particularly air observation. Once observed they will, if kept under surveillance, provide the enemy with exact information of the location of bivouacs—which later can be bombed. If instead of being marched on different routes they follow the column they will attract observation and the column will suffer as a result. If they remain in bivouac throughout the day to follow by convoy at night they must operate without lights, or hold up a sign for all observation to read if operated with lights.

It does not seem to have occurred to most of us that there could be any way of marching trains other than the time-honored method of "grouped under S-4." Why have we not observed large civilian trucking concerns and taken a lesson from their operating methods? Operating several trucks over the same routes, civilian fleet owners do not operate them as convoys, but instead as individual trucks. But the army has always operated its trains in convoys and therefore it probably always will. In the old days convoys needed protection, they were slow and cumbersome, and we all know what protecting the trains did to the mobility of the armies of Frederick the Great. Today it is different. Our truck convoys are capable of many times the old convoy speeds, and are correspondingly

(Continued on page 337)

The Caloric Measure of a Man

By LIEUTENANT J. D. WILMETH, *Infantry*

"When do we eat!" is accepted by the world's historians as the credo of the AEF.

"Follow me," had been a motto of the feeding forces long before the fighting forces took it as a maxim.

A well disciplined soldier may leap to the fore when "Charge!" is sounded, but everyone leaps to the door when "Chow" is sounded.

"An Army moves on its stomach," has become as axiomatic as Napoleon's tenets of war. In fact it was Bonaparte who allowed a division to hang a civilian commissary who had not delivered food for twenty-four hours.

That the chow line is the Army's life line is an uncontested dictum. For the enlisted man, the officer, and the General Staff food is the base point.

If, instead of "When," I ask "How much do we eat?" a stentorian cry of "Not enough!" assails me. It was this answer to the question that set me on an investigation.

Telling you that Army messes daily produce a total of 990,000,000 calories won't glut your dissatisfaction, so let us bring the matter to home plate, gastronomically speaking. How many calories *should* the average soldier get (if you will play the part of the average soldier) and how many *does* he get? That is what we want to know. And right here before I place any more cards on the table, I will tell you I am *not* going to define a calorie, either physically or physiologically. Not even biologically. The feminine folk of embonpoint have so covered the term with connotations that it has been enlarged into an arcanum which I won't attempt to explode by introducing or defending a true definition. Let the matter rest in the pleonastic metaphor that a calorie is to you what gasoline is to an automobile—each is burnt in an internal combustion engine, does work, and the ash is exhausted out the tail pipe of each respectively, if I may make a homely comparison. So much for it. Let us return to the table.

A writer in the *American Medical Association Journal* gives as his opinion that a man doing sedentary occupations (bookkeeping and other office work) requires from 2,500 to 3,000 calories per day; a man living mostly in the open and doing medium hard labor (such as a farmer, ditch digger, etc.) requires from 3,500 to 4,000 calories per day; a man doing excessively hard labor in the open (lumberjack, stevedore) requires from 4,500 to 5,000 calories per day. These figures are based on an outside weather temperature of from 45 to 50 degrees, and a number of calories must be added or dropped for each 10 degree fall or rise in the thermometer.

A soldier falls in the second class mentioned, in my opinion, but if you're not willing to accept it, let us bring the matter into the mess hall with a g.i. opinion, offered by a medical officer, who contends that 4,000 calories per day takes care of any garrison soldier in the States. This amount should be lowered to 3,500 calories per day if on foreign service, and raised to 4,500 per day if in the field of campaign.

An Assistant Inspector General in the Panama Department who has written several treatises on Army nutrition and is considered one of the foremost Service dieticians asserted that 3,500 calories per day will suffice the energy requirements of soldiers on tropical service.

Now that we have the tape measured, let us see how the tape worm measures.

During the months of November and December the mess of a company of Infantry in eastern New York, investigated at this time, was supplying an average per person per day of 5,400 calories to men doing ordinary garrison duty. This is an excessage of 1,400 over the required 4,000.

At a CCC concentration center in northern New Jersey during the months of September and October the enrollees consume an average of 6,000 calories per man per day. (I admit the unfairness of this example since all men were recent candidates and were filling up vacuities existing prior to enlistment.)

A battalion of colored troops in a southern state averaged 6,200 calories per man per day during summer training. An oversupply of 2,200.

One investigated company in Panama averaged 5,000 calories, another company fed 5,100. The Army has declared 3,500 to be sufficient on tropical service.

(In all cases mentioned the number of calories are those actually consumed, refuse having been deducted.)

Well, now that we're caught pot-bellied with the guilt of over-consumption, what is the penalty for too many calories in the craw? Again from the AMA, "The consumption of more calories than are normally expended in one's particular occupation results in raised blood pressure, overwork of kidneys, pancreatic and other digestive glands, and overloads the entire alimentary, digestive, and evacuatory systems, consequently endangering good health and reducing life length."

If actions speak, then we must conclude that the health of a horse is of more concern to the Army than is the health of its men. A soldier, roughly valued at $10,000, hasn't the benefit of the scientific feeding a $160 horse receives. Careful observance of an animal's individual feed chart is imperative, and woe betide the careless hand who is caught giving Dobbin an extra dipper of oats. On Sundays, since work is decreased, stable diets are cut; but with men, for the same reason, holiday meals are doubled, often containing 9,000 calories. Beware, for the mess sergeant is feeding us to death.

But (you'll never believe it) the mess sergeant is not *the guy who done it*. What better criterion of the perfect daily diet could be chosen than the War Department Official Garrison Ration, each component item prescribed to the ten-thousandth of an ounce by weight. But if this ration were fed, measured on a pharmacist's scale, we would still be getting 2,300 calories overage. Aha!

My own opinion is that the ration was *intentionally* overstuffed—and for a very good purpose. There is nothing more thoroughly American than over-eating. It is a national habit of long sitting, and our Army should reflect the characteristics of the Nation. And also, it's a fine recruiting measure. The groaning board has done far more for enlistment than the niggardly monetary pittance entered on the payroll. It brings 'em in—and it keeps 'em. The size 48 web belt is an article of issue, and the garrison paunch is the legacy of the old-timer. Our ration is the richest of any Army, and exceeds by one-third the next best—the British. Compared to other nation's Services, ours is an over-sated, gluttonous, body of epicures. We *enjoy* eating. And knowledge of the harm resulting from calorie craving will no more drive us from the table than knowing that hyperbibulousness conduces cirrhosis of the liver has stemmed the bottle neck of Bacchus's tonic. Khayaman "Eat, drink, and be merry" has a legion of disciples still with us.

Having condoned the garrison ration in all its calories as no more than befitting men of our breadth, let us take the field and search for our closest approach to starvation. Do we get an increase of calories, for certainly we are producing more energy, or are our calories numbered? Regulations state, "Its components (the Field Ration) will correspond as nearly as practicable with the components of the garrison ration." But since, as pointed out, our needs can be supplied by 4,500 calories, the 6,300 of the garrison ration should be ample to support an expanded gut. Punningly, even in the field, the waste line still exceeds the waist line.

But, getting down to hardtacks, what dire threat to health and comfort is found in the Reserve Ration, or, the last extreme, in the *No* Ration? There are those who have withstood the hardship of stomachical emptiness.

A horned frog lived for 33 years encased behind the cornerstone of a Texas courthouse. But this is unfair competition.

Gandhi lived for six weeks on water.

The Japanese soldier lives on a ration of fish eyes and rice. (Literally. No tapioca pudding in this case.)

The Chinese soldier lives on and on.

Mohammed used to fast for thirty days at a time.

Socrates went for—but you see the fallacy of this. I have no *American* examples. The closest approach is the Arab marauder who can live for a week on a handful of dates. Some of our most proficient gigolos do as well.

So, despite one or two crackpots in this country who have gone on a water diet for the publicity, the No Ration remains a totally foreign practice and a despicable makeshift which no bread-and-butter soldier would endorse. It is alien to the taste, and such an un-American activity deserves no further consideration.

But what calories await the soldier who after nine hard innings of battle has nothing to eat but his Reserve Ration? His plight is sad, indeed, but that such an extremity should be of short duration is recognized by the Supply Section of the Infantry School, whose instructors feel that the soldier will never have to go longer than a day (two meals) on the canned ration. This is a beatific feeling, and I do not wish to dispossess it from the untroubled mind. But what do you suppose, just for the sake of hypothesizing, would happen to men who were forced to live on a reserve ration each day for a week—two weeks—three weeks? Certainly it would develop no belt stretchers, but would it call for stretcher bearers?

For guinea pigs, in answering this question, let us take a party of five Americans who made a trip along the Great Divide opposite Porto Bello in Panama. The land is above the banana and cocoanut belt, wild, uninhabited, capable of supplying no tropical foods. Travel in this country is a continuous process of cutting a way foot by foot through a tough, barbed mat of vines and jungle growth. No lumberjack could have labored more arduously than did these five, and certainly, if at any time, they were entitled to the 5,100 calories per diem they had been enjoying in the company mess. But full stomachs mean full packs, and full packs mean quicker fatigue, and so that loads might be as light as possible, only these foods were carried:

5 lb. slab of bacon
2½ lbs. of chocolate bars
1 lb. of oatmeal
3¾ lbs. of raisins
½ lb. of tea
3 lbs. powdered milk
2 lbs. onions
5 lbs. potatoes
5 lbs. hardtack

Light weight, food value, and ease of preparation governed the choice of menu. No meat except salt pork, which is rather unpalatable, has a higher calorie content than bacon. Chocolate has more value than any other food. Dried peaches beat raisins by a small margin, but are not as enjoyable a dish. (A handful of raisins and two squares of chocolate constituted a daily lunch.) Oatmeal has more calories than any other cereal. Tea is more

stimulating than coffee, easier to prepare, much lighter in weight, and the wet leaves can be used for a poultice. Powdered milk is light, easily prepared, relatively high in food value, and contains vitamins missing in most of the other foods. Onions were taken purely for flavor. Rice has a lower value than beans or peas, but the latter two require a lengthy preparation. Potatoes are heavy for the amount of food value, but were taken to fill in crevices in the packs and thus reduce rattling. The hardtack was a mistake. Most of it was thrown away.

The total weight of the food was 30½ lbs., giving each man a fraction more than 6 lbs. as his share for *eight days*. With 5 lbs. of wild turkey added during the trip, the daily allowance per man per diem was ⅞ lb. In barracks each man had been accustomed to 6 lbs. daily fare. Yet, strangely, no man on this trip suffered from hunger pangs. No one within a hundred miles had more to eat than we did, and so, I concluded with Einstein, hunger is relative. I have said "we." Yes, I was along, else I never would have believed that men could eat so little and still fell content, for no man save Henry VIII ever loved food more than I. Yet, even on this harshly reduced diet, I was never tempted to bite other members of the party.

Equally as strange, when we returned home we didn't have enormous appetites. We looked about the same, except for beards, and felt much better. I had lost three pounds, easily removed from the beer line. One other, who had recorded his weight before leaving, had gained a pound (probably one of the three that I lost).

According to food experts we were entitled to about 5,500 calories per day. We lived, and well, on 960. Of course, our experiment was not of sufficient length to disprove the experts (I would be willing to continue if there's a future in it) but it was long enough to alleviate the chimera formerly produced by reflecting on the possibility of having to subsist for a week or week-end on the Army Field Ration. Why one could live in Gargantuan plenitude without even cheating his dyspepsia on its bountiful weight of 1.88 lbs. and 3,580 calories. War has lost its most frightful terror.

Questions and Answers on Modern Cavalry

By LIEUTENANT COLONEL H. McE. PENDLETON, *Cavalry*

The following statement is noted in the January-February, 1939, issue of The CAVALRY JOURNAL: "The CAVALRY JOURNAL should furnish a free forum" for the discussion of Cavalry officers.

This has prompted me to present a list of questions most of which have been asked not only by National Guard and Reserve officers but by many Regular Army officers.

In order to have a premis or basis upon which to work, I have selected the regiment; based on the new Tables of Organization of the Cavalry Regiment Horse (war strength).

1. Why not increase the fire power of the Machine-gun troop by doing away with the water-cooled gun and substituting the air-cooled in greater numbers without increase of personnel or animals?

2. Assuming your regiment has been trained by you, as you want it trained, what do you consider should be the normal actions of the regiment in the event of a sudden (10 second warning) aviation attack?

3. Why not substitute a light mohair pad similar to that used with the pack saddle and wool blanket for the present saddle blanket?

4. When, if ever, is the commander justified in using his scout cars for any mission except that of reconnaissance?

5. In the average situation, is the regimental or smaller unit commander justified in marching with a covering force on a wide front instead of the normal advance guard formation?

6. Should the squadron commander either in regiment or acting alone, group his machine-guns (other than 50's) subject to his orders or leave them with the troops?

7. Assuming a simple situation with the regiment on the march, on one road through average rolling country, all the truck transportation left temporarily well in rear, and enemy mechanization active:

How would you as regimental commander place your .50 cal. guns?

8. *a*. What do you consider the normal use or uses of the 60-mm. mortars with the horse cavalry regiment?

b. Do you consider the additional weight, bulk and personnel warrants this highly specialized weapon in the regiment?

c. Why not replace the 60-mm. mortar with the equivalent in weight and ammunition bulk by the .50 cal. gun which must now be considered non-special, and available for habitual use?

9. The regiment is acting alone; assume your mission is to hold a piece of commanding terrain against enemy mechanization, what in general will be your dispositions, i.e., where will you put your antitank weapons? Supporting troops? Size and location of reserves, etc.?

In order to properly answer any of the above questions reasons should be given. For example, to merely say, "Yes" or "No," in answer to questions 5 and 6, is not considered sufficient.

(For answers, see page 331)

Adoption and Supply of New Equipment

By MASTER SERGEANT JOHN J. REARDON, D.E.M.L.
(Office Chief of Cavalry)

This article is written in the hope that it may be of value to troops in the field. It may serve also to acquaint National Guard and Reserve officers as to the manner in which new equipment originates, how it is adopted, and how it is supplied to an arm or service. The writer has served in the Supply and Fiscal Section of the Office Chief of Cavalry since it was originated and may state that every Chief of Cavalry since General Holbrook has encouraged and welcomed ideas on new equipment or recommendations on the modification of existing equipment whereby the efficiency of the cavalry might be increased.

If you should have an idea on a new item of equipment, write direct to the Chief of Cavalry submitting full details, drawings, etc. Forward a sample, if practicable, for consideration. In this connection attention is invited to army regulations 850-50 covering inventions and patents.

The Chief of Cavalry is responsible for the actual initiation of requests for the development of new equipment pertaining to cavalry together with the military characteristics thereof. Army regulations 850-25 cover this phase.

Any idea on new equipment or a change in existing equipment should be received in the Office Chief of Cavalry. If, in the opinion of that office, it should merit further consideration it is forwarded to The Cavalry Board for review and recommendation before requesting the responsible supply service (Ordnance, Quartermaster, Signal, etc.) for funds to proceed with development or modification.

In most instances the findings of the testing agencies are final; i.e., the item will be either rejected, approved, or recommendation made for some further modification with the request perhaps that it be resubmitted to the Board for further tests.

Each of the supply services has set up in its own office a technical committee which includes a member representing each of the using branches (Cavalry, Infantry, etc.) as well as the other supply services and general staff. The first step is to take the matter before the technical committee concerned to determine its merits and also to find whether or not there exists a similar requirement by other branches of the service. If approved, funds are then set up or authority is granted to purchase or manufacture a certain quantity of the item concerned for tests by the various interested service boards.

A test lasts from several days to several months and in some instances over a period of a year or more, depending on the item. The Board is also charged with making recommendations for the basis of issue and the proper use of any new item of equipment. Therefore, before any new item of equipment is finally adopted, the following points must be assured:

(1) A definite requirement must exist.

(2) The Military Characteristics assure that it meets every phase of the requirement.

(3) The Technical Committe assures that there is no duplication between using Arms in similar items and that the needs of all Arms are met.

(4) The Assistant Secretary of War and the Chief of Supply Service assure that it can be procured.

(5) The General Staff assures that it fits into the picture and is essential.

The Chief of Arm is the prime mover in the initiation of a project and follows it through from beginning to end with the assistance of his Board and his representative on the Technical Committee.

Upon conclusion of the tests the reports of the various Service Boards are referred to the Technical Committee concerned. The committee then renders a full report of their findings, together with recommendations on the reports of the testing Boards, to the Secrtary of War for final action. If approved by the Secretary of War, the item is then classified as Standard, Limited Standard, or approved for Limited Procurement. What are the meanings of these terms?

"Standard" items are the most advanced and satisfactory which have been approved by the Secretary of War and are preferred for procurement to meet supply demands.

"Limited Standard" are those items which do not have as satisfactory military characteristics as "standard" items, and are either in actual use or available for issue to meet supply demands. Complete major units will not be produced under this classification. Component parts and complementary items, however, even though they may be "limited standard" items, may be procured if necessary to maintain complete units in serviceable condition.

"Limited Procurement" items comprise articles of equipment which have passed service tests favorably but are not ready for classification as an adopted type and which before such classification should be subjected to an extended service test. The approval as to limited procurement type signifies that the item is probably suited for service use but requires refinement in design or further use in hands of troops to determine definitely its suitability.

Newly adopted items of equipment are then incorporated in Tables of Basic Allowances whereby they become authorized for requisition and supply. In most instances funds must be secured for their manufacture and procurement in the annual appropriations approved by Congress, and in such case it may take a period of from one year to eighteen months before such funds become available.

In some cases requisitions submitted in the field and received by Supply Services are referred to the Chief of Cavalry for recommendation as to whether or not the equipment should be supplied. These cases arise when requisitions are made for items listed in the Table of Basic

Allowances but where the actual supply is so limited as to have been placed on a priority list by the Supply Service concerned. This situation is the result of equipment having been approved and authorized but procurement delayed through lack of available funds. It is suggested, therefore, that close attention be paid to pages 1 and 2 of the Table of Basic Allowances which give general and special instructions on important factors covering the issue of equipment.

When the Phillips pack saddle was originally approved for issue, it may be recalled that funds were set up over a period of several years to provide our total requirement. As the funds became available and saddles were manufactured, a priority was established by the Chief of Cavalry, and the saddles were automatically supplied by direction of the Quartermaster General in order of such recommended priority without requisition from the field. Such was the case for the light machine gun, caliber .50 machine gun, scout cars, etc. It will be noted from the latest approved Table of Basic Allowances, where such items were incorporated, the substitute item or the item existing at the time of adoption of the new item is also included. Therefore, requisitions should be worded exactly as the items appear in the Table of Basic Allowances, and if the latest model is not available for issue, the substitute or existing issue item will be furnished to make up any shortages.

Shortly, a limited number of M-1 Rifles will be supplied to organizations in order of priority over a period of time. This rifle is supplied by the Ordnance Department, whereas, the scabbard is supplied by the Quartermaster General. This statement is presented here in order to explain why requisitions for scabbards should not be initiated merely because the M-1 rifle is on hand; or, vice versa. The Quartermaster General is modifying all scabbards now on hand in order to take care of the total number of M-1 rifles to be issued in the present order of priority. It may be readily seen that rifles will come from one destination and the scabbards from another, and in many instances one may precede the other by a short period or even a lengthy period of time. The Quartermaster General has been furnished an established priority for the issue of scabbards to coincide with the priority established by the Adjutant General for the issue of the M-1 rifle to the Army. Close coördination between the Office of the Quartermaster General and Ordnance will be necessary if delivery of one is to be followed closely by the other.

If, in the judgment of the Commanding Officer, some uncalled for delay appears in receiving the scabbards after receipt of the rifles, an informal note direct to the Chief of Cavalry or to the Supply and Fiscal Section of the Chief of Cavalry's Office will promote quicker coördination towards receipt of same, or an explanation of reasons for undue delay which may have arisen.

* * *

There are listed for your information and guidance, some of the items now contained in Table of Basic Allowances that cannot be filled on requisition, due to budgetary limitations. Until such time as these items are completely furnished to the entire service, the limited standard item will be issued or used:

Supply Branch	*Item*
Engineer	Demolition kits, Cavalry
Ordnance	Helmets, tank
Vehicles	Scout cars
	Combat cars
	Mortar Motor carriage
Weapons	Gun, Mach., Cal. .30, M1919A4, with mount, tripod M2.
	Gun, machine, cal. .50, Browning, M2 HB, with Mount tripod M3.
	Gun, sub-machine cal. .45, Thompson, M1928A1.
	Mortar, 60-mm. M1.
	Rifle, U. S. Cal. .30, M1.
Q.M.	
Individual Equipment	Bags, canvas, M1936
	Belt, cartridge, cal. .30, M1.
Organization Equipment	Bags, cantle, M1936
	Cans, milk
	Cans, nesting
	Goggles, M1938
	Pockets, Pommel, M1936
	Saddle, Military, Phillips', M1936
	Set, picket line, M1933
Vehicles	All listed in T/BA.
Signal Corps	Radio Sets:
	SCR-193
	SCR-245

Answers to Questions on Modern Cavalry

1 Herewith, ideas of one Lieutenant Colonel of Cavalry who has served with the Cavalry Division and umpired with the mechanized force in the 1936 maneuvers, as answers to the foregoing questions:

Answer to Question 1: It is my firm belief that the air-cooled gun should be substituted for the heavier, bulkier water-cooled gun, for a number of reasons. I do not believe that the difference in the ability of these two guns, except in the case of a highly organized position defense, is enough to consider seriously. It is my belief that you could increase the number of guns by at least one-third; increase the ammunition by more than one-half; triple the number of spare barrels and still not increase the personnel or animals.

Answer to Question 2: I do not believe the Regiment should hold, or in any way delay its march by dispersion for any attack by enemy aviation. When the command halts or by dispersion, causes any appreciable delay, it presents the enemy airplane with a better target or helps to accomplish the enemy mission without much work on their part. However, this does not mean that certain highly trained machine gunners should not take offensive action by fire or that the command itself should do nothing other than continue the march. By a slight dispersion, increased gaits, or both, together with fire from .45 cal. automatic pistols, the enemy planes may be scattered or brought down.

Answer to Question 3: Experience has proven that the mohair pad furnished with the Phillips pack saddle has been one of the finest pieces of equipment furnished in recent years. It is durable, easy to keep clean and easy on the horse's back. A light pad of this type, together with a wool blanket, seems more satisfactory for the following reasons: it offers a greater pad thickness without the accompanying wrinkles and stiffness of the present saddle blanket; it is easier to keep soft and clean, and during the greater part of the year, obviates the using of a bed blanket in the cantle roll.

Answer to Question 4: I would say emphatically that the Commander is never justified in using his scout cars for any reason other than that of reconnaissance. I believe that every officer knows that in an emergency, any and every means is justified, but to permit the use of the scout cars for other reasons except in that drastic emergency will result in a Commander finding himself without sufficient scout cars, when they are most needed.

Answer to Question 5: I believe that in most situations, the Commander should use a covering force in preference to the normal advanced guard formation. With the increased speed and mobility of Cavalry marches and action, together with the rapidity of movement of mechanization, the normal bulky and somewhat complicated advanced guard formation is normally not good. We must realize that in any country in time of war, fences will be cut, cultivated fields will be marched over, thus doing away with the necessity of sticking to roads. Also, a much smaller command may be used in the covering force than in the old advance guard formation, thus permitting more frequent changes on this arduous duty.

Answer to Question 6: I realize that many Cavalry officers are not in agreement on this subject. However, I believe that it is so much easier to attach than to detach, that while the training of the light machine gun platoons may be left with the Troop Commander, the Squadron Commander, especially when acting alone, should group all of his machine guns, other than 50's, under one officer subject to his orders.

Answer to Question 7: Since I have but eight .50 caliber guns in my regiment, I can see but one solution and that is to place the eight in groups of two; one group forward, one group on each flank and one group in the rear. To my mind, this leaves me very inadequately protected in any place against active mechanization. However, I must assume that the enemy's observation is as good as mine and that they are most likely to attack me in my weakest point, which would normally be in flank or rear. Therefore, I can not see my way clear to placing any guns other than as mentioned above.

Answer to Question 8: a. To my mind, the 60-mm. mortars would normally only be used in two situations; one, to support the holding or dismounted attack; and two, in an organized defense to assist that part of the command that was most likely to be subject to attack.

b. The use, as mentioned above, seems so unusual that I do not believe the additional weight and bulk is warranted for these few guns. They are not sufficient in number to lay smoke in the event of attack; they are not sufficient in number to assist the regiment as a whole in organized defense and according to Infantry principles of two per company, they are hardly sufficient to assist an average holding or dismounted attack.

c. Assuming that the answer to Question 7 is correct, and I believe it is, it seems to me that it would be much more advantageous to replace the 60-mm. mortars with the equivalent in weight and ammunition bulk by the .50 caliber gun which appears to be more and more essential every day as an anti-mechanization weapon.

Answer to Question 9: I would place at least a part of my anti-mechanized weapons on the commanding piece of terrain or covering the probable enemy approaches to the terrain, giving to these weapons only sufficient supporting troops for close-in defense. These supporting troops would not consist of more than one rifle troop at the most. I would then hold the remainder of my force with the remaining anti-mechanized weapons on one flank. This would permit me to attack enemy mechanization after they had committed themselves. If, however, they decided to avoid the terrain and move entirely around, I would still not be committed to one position. In defense, I have very little except my anti-mechanization. However, after the enemy mechanization has committed itself; attack and maneuver ability, I am at least as good as he is. By avoiding taking up a position, I force him to commit himself, thus leaving me freedom of movement and action.

Mobile Forces

It is to be trusted that most readers of this issue of The CAVALRY JOURNAL will have read the article dealing with Polish Cavalry Doctrine before they have occasion to turn to this part of the JOURNAL. Although that very amplified treatise on the "Training of Modern Cavalry for War" may appear to some as dull reading, it is recommended to the more alert readers as being extremely important. The entire article is replete with gems of thought and analysis which can stand the study of reading and re-reading. This one sentence is worthy of considerable reflection, "Cavalry training for action against mobile forces is so complicated in itself as to require nearly all available (training) time."

It is frequently a matter of speculation as to whether the avereage individual responsible for the training of cavalry operations appreciates the difference between the factors which are important in operations against infantry as compared to those which involve action against hostile forces of equal or superior mobility. Perhaps this difference is so fundamental that it is evident to all. It is actually believed, however, that this fundamental proposition is given far too little consideration.

Not only is the foregoing feature sometimes overlooked by cavalrymen but on too many occasions unappreciated by commanders of larger units. A recent Chief of Staff has stated that any military man should realize without hesitation that in conflict between two equal forces the force which incorporates a mobile unit such as cavalry and takes advantage of its presence should be successful every time.

Flanks and rear areas are so vitally sensitive under modern conditions where replacements in ammunition and supplies run into hundreds of tons rather than tons that no move can be safely contemplated unless flanks and lines of communication are secure.

On the part of cavalry leaders themselves, is it genuinely realized that the employment of their own force must primarily be directed toward hostile mobile forces before combat with slower echelons can be a matter of possibility?

Where one has the advantage in mobility in the ratio of two and three to one, many actions are possible that must be discarded in the face of equal mobility. That basic doctrine must be understood thoroughly by every cavalry leader.

What Are You Going To Do When You Get There?

During post-war years, especially recent years, every major power has given intense study to the creation and organization of highly mobile elements of warfare. That this course of action is fundamentally sound no one will deny, particularly if they adhere to the fundamental principle that decisive results in war come only from a war of movement. There is some risk, however, in the possibility of wishful thinking toward achievements in this realm that are entirely beyond reasonable capabilities. There are missions and operations peculiar to the capabilities of each member of the great combat team. Military leaders of the past have come to grief through faulty evaluation of these factors in assigning objectives far beyond the capabilities of the tool involved.

It is believed that there is a growing conception which visualizes actual warfare under map problem conditions of roads, obstacles, weather and other allied factors. Detailed information covering the rapid movement of an unopposed German force southward in March, 1938, should give military students grounds for further thought in this field.

The mental visualization of tactical feasibility in hurling large masses of highly mobile units should come closer to actual practicability in these operations. The coordination of highly mobile elements under the most advantageous conditions strains the facilities which we now possess. More thought should be given to the increased difficulty of control and coördination under the fog of the battlefield.

It is assumed that because administrative movements are negotiated with little difficulty and because various operations under maneuver conditions have been adequately handled, combat doctrines can be based on such activities.

It is believed, perhaps, by too many that great columns of mechanized and motorized elements will assemble, entruck, and move out with no question as to their ability in arriving at objectives where ordered. In a movement toward a distant objective it is not the first 10, 20, nor 50 miles which ultimately will count, but more those last difficult 4, 6 or 10 miles which will be accomplished through combat and combat only. Therefore, it is not so much where are you going or how are you going, but what you will do and how you will do it when you get there.

Cavalry in China*

Horse cavalry is of vital importance in a theater of war like China, where terrain difficulties often preclude the employment of mechanized units. Aerial reconnaissance over wooded and mountainous terrain is frequently impossible. Here, too, horse cavalry must be depended upon. Although both the Japanese and the Chinese have been using cavalry, there have been no important engage-

ments between cavalry units, except during operations in Inner Mongolia, where the open terrain required the use of highly mobile units. The experience in China demonstrates that cavalry units must command greater independent strength than that of the Japanes cavalry, which lacks sufficient machine guns, artillery and motorized equipment.

*Reprinted from *The Command and General Staff School Military Review*, June, 1939.

✓ ✓ ✓

Honor Roll

The following organizations occupy a place on the Cavalry Honor Roll by maintaining 100% membership in the Cavalry Association:

National Guard:

103rd Cavalry
104th Cavalry
106th Cavalry (Michigan Component)
112th Cavalry
113th Cavalry
114th Cavalry

Cavalry Reserves:

308th Cavalry (61% Membership, highest in that component).

The United States Cavalry Association

Organized November 9, 1885

The aim and purpose of the Association shall be to disseminate knowledge of the military art and science, to promote the professional improvement of its members, and to preserve and foster the spirit, the traditions, and the solidarity of the Cavalry of the Army of the United States.—Article III of the Constitution.

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SUBSCRIPTION RATE: $3.00 per year, payable in advance. Foreign postage, 50c additional.

CHANGE OF ADDRESS: Prompt notification of change of address to the Editorial Office is requested.

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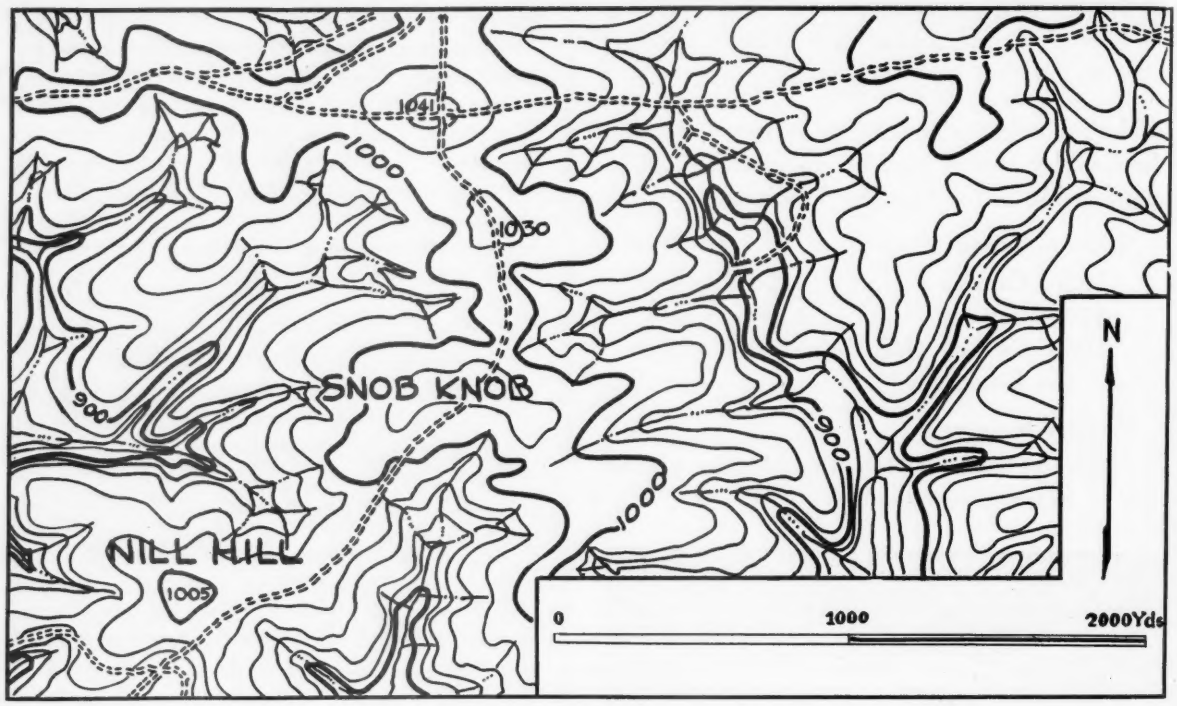


What Would You Do?

By the fate of war and graces of the regimental commander, he even commanded I Troop, this Captain Ego Istick I'm speaking of. One of those dudes who placed the big "I" before everything. Sort of an obnoxious bird. His squadron commander tells me that he always knew the answers—always knew a better way to do things than the way they were done—always making suggestions when suggestions weren't needed or wanted. But at that from what I hear, except for the capital letter "I" he used in every sentence of every remark, he probably knew his stuff. Wonder what he'd have done in tactics at Mr. Riley's *école de jeunes hommes?*

His cavalry regiment, with a battery of right and left handed cannon ball shooting associates attached, was, as a good old horse regiment should be, in a tight place. On the south end of the main line of battle protecting the Blue right against a brigade of doughboys already deployed for attack. Tight? You bet your life. Scout cars on each flank, 1st and 2d Squadrons in the line, dismounted. The 3d Squadron, renforced by a platoon of 30's and a section of 50's, in regimental reserve. As Captain Ego Istick commented later: "Knowing what was to happen, I think the colonel displayed good judgment in placing the 3d Squadron in reserve."

Comes the order to withdraw to the west to another delaying position. Scout cars on reconnaissance on the flanks. The 3d Squadron to protect the withdrawal of the regiment by covering from a position on the south flank. But let Captain Ego Istick tell the story:

"My troop—I Troop—one platoon of 30's (from Machine-Gun Troop) and one section of 50's (from Special Weapons Troop), attached, was ordered to occupy a covering position in the vicinity of SNOB KNOB (see map) to delay the advance of Red infantry from the east until ordered to withdraw and to protect the south flank of the regiment and establish liaison with the 1st Squadron on my left. . . . But they knew when they ordered that, that my troop—I Troop—could do it, and do it well.

"I issued instructions to my second-in-command to conduct the troop to SNOB KNOB. I then left immediately for SNOB KNOB on reconnaissance. I was accompanied by my platoon leaders and machine-gun commanders. You will notice that my reconnaissance was prompt. I always saw to that. I immediately recognized that there was not great time for a long and detailed reconnaissance. I then issued oral orders, upon completion of my personal

reconnaissance, for the occupation of the position. I kept my subordinate commanders well under cover and I pointed out terrain features. I always did that.

"I (by this time the I's had it) I—I—I—drew on the map the dispositions I wanted of the three rifle platoons, the light-machine-gun platoon, the attached machine-gun units, and the led horses in the vicinity of SNOB KNOB, and I made arrangements to protect my south flank—"

But, gentle reader, reference these dispositions, were you Captain Ego Istick, the I in command of Troop I—

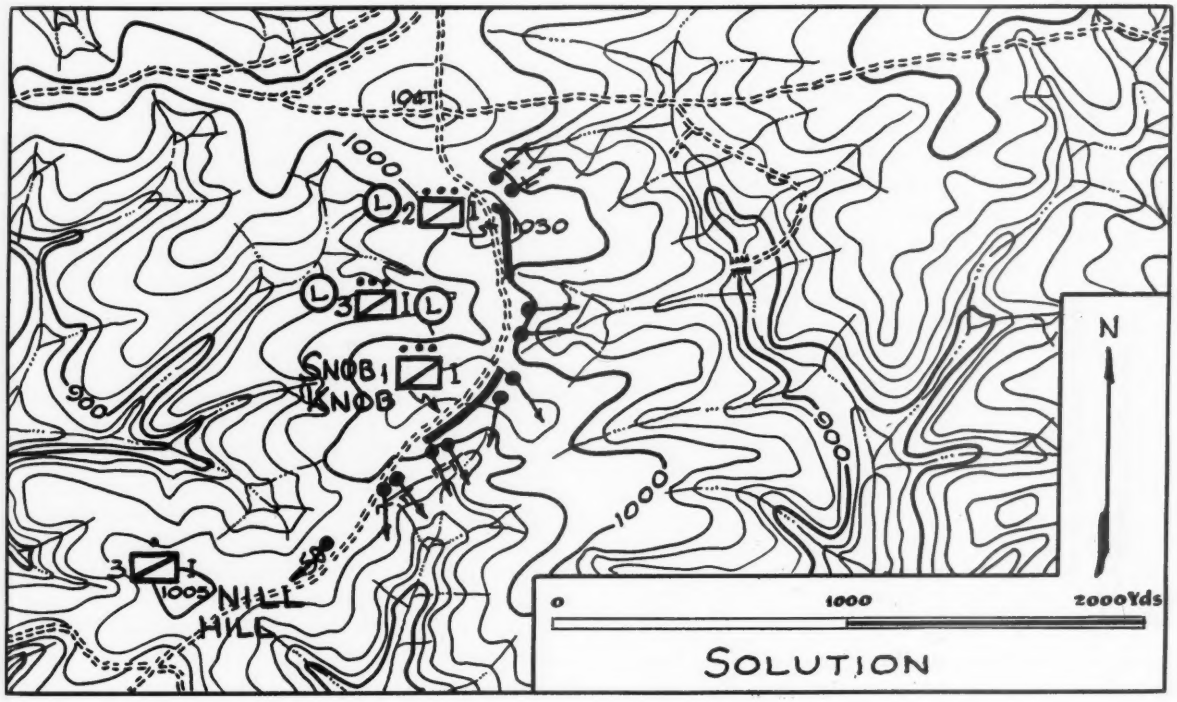
WHAT WOULD YOU DO?

(For solution see below.)

M-Day Cavalry

But then, cavalry simply cannot be improvised in a hurry, nor trained to efficiency by any save a lengthy process. And although Franco possessed a fair number of reasonably good native mounted troops, timidity invariably marked his employment of them; while the Reds, being an almost entirely extemporized force, suffered from an absence of anything like an adequate and properly trained body of cavalry throughout the entire campaign.

NOTE: This is an extract from the leading article of this issue of The CAVALRY JOURNAL. The entire article is commended to the attention of all cavalrymen.



What Would You Do?

A Solution

(See solution map.)

"I drew a sketch for the official record of the action—I always did that, and I made this one for my personal file," Captain Ego Istick explained. "You see I always considered everything. The positions I selected had good fields of fire at mid and long ranges with cover close at hand for the led animals. I held the four caliber .30's under troop control and I had them emplaced immediately on commanding ground where they could use long-range fire. I placed one platoon on SNOB KNOB and the others as shown. I attached light machine guns to the front-line platoons. I had the caliber 50's sited to fire on the road leading southwest from SNOB KNOB. I had all the machine guns actually placed in position. I put a combat patrol of one squad of the 3d Platoon, which I held out as my reserve, on NILL HILL.

"That was all there was to it. I'd do it exactly the same if I had it to do over again.

"I could go on with what I did the rest of that day and days, weeks, and months to follow. Modesty forbids, but I have asked quite a number of people and I see no harm in saying that they agree with me that I won the war."

General Hawkins' Notes

The Training of Patrols

The most practical method for a troop commander to teach his squads the principles of patrolling is to divide the instruction into two parts or phases.

First, the squad leader should take his squad out onto varied terrain and practice it in the "drill" of the patrol. He must have his squad so drilled that he can control it under all circumstances. He puts the squad into the ordinary patrol formation. Column of twos with five to ten yards distance between twos and intervals of five or more yards, depending on the terrain, between the troopers of each pair of twos. The patrol leader and one trooper is in front of the patrol by a distance of twenty, fifty or more yards according to the nature of the ground, visibility, weather, darkness or daylight, and the situation in regard to the enemy and last but not least, the mission of the patrol. But for drill purposes, assume any distance that might be applicable to the terrain. The squad leader is never so far forward that he cannot see his patrol behind him. The second in command is in the rear pair of twos.

Having taken a patrol formation, the leader puts his squad through various exercises which he orders by means of signals supplemented by verbal commands when necessary. These exercises should be made up of movements which the squad might be called upon to make in the performance of patrol duty. They are movements which may have to be made so suddenly and so quickly that the squad leader would not have time to ride back and explain them to his men. The squad must, therefore, be drilled to execute such a movement at a signal or word of command. The men should understand these movements and what they are for. They thus become equipped with a bag of tricks out of which they may draw a play to meet each necessity. Some of the exercises should be as follows:

a. *Pistol Attack, Follow Me.* He leads the squad in this attack in any direction, forward, to the right, to the left, or to the rear. In the latter case, the second in command leads the attack. The order must be obeyed without question and with the utmost celerity.

b. *Dash to the Rear.* The second in command leads the retreat at speed, and the troopers separate widely to the right and left so as not to offer a good target to the pursuing fire of an enemy who may have been encountered suddenly and to the surprise of the patrol. The second in command rallies the patrol when he has got it into cover, and the leader himself, with the one trooper who always accompanies him, overtakes the patrol as best he can.

c. *Take Cover, to the Right (Left) (Front) (or Rear).* The men dash to cover in the indicated direction and halt when they are in it, keeping separated as they were in the formation of the patrol if this is possible.

d. *Halt, to Fight on Foot, As Skirmishers in an Indicated Direction.* Usually, this should mean that the troopers link in couples and leave their horses immobile. When a patrol halts to fight on foot the horses should not be sent away. All the men are needed on the firing line which moves a convenient distance away from the horses. For these reasons it should be understood that the horses are habitually, and unless other directions are given, linked in couples as the quickest method and left immobile.

e. (For crossing open spaces, and when considered necessary) *Deploy at Ten (or more) Yards Intervals and Follow Me, at (indication gait).* This procedure is wise when the open space is very wide (more than 100 yards) and there is doubt as to what is on the other side of the open space.

f. *Signals for Marching Gaits, Leading, or Halts* for rest, must be closely understood and not confused with emergency signals. Halts for rest are usually made in the same formation as that of the patrol when marching.

When these simple drill exercises have been practiced so that the leader, from his advanced position in front, can control instantly his patrol on all sorts of ground to meet any emergency, the patrol is ready for the *second phase* of its training. The Platoon Commander takes the patrol out with a given mission and certain prepared situations to present to the squad leader on varied ground.

The following situations can be simulated:

The Patrol is fired on by the enemy of unknown strength from a concealed position. The action of the squad leader now depends on what kind of patrol the squad is. In any event, the first thing the squad leader does is to signal *Take Cover.* Then he takes a look to observe what he can. If the patrol is merely a point of an advance guard, it must deploy widely or advance through the best cover and find out what is opposing them. If it is an independent reconnoitering patrol it would probably attempt to go around the enemy and examine the situation from the flank and rear and proceed on its mission. If it is a combat patrol, it remains in cover and keeps the enemy under observation until satisfied that no flank attack by any important hostile force is under way. It then must deploy and move forward to maintain its position as

a combat patrol to guard its main body from flank attack. Or, it may have to fight in position while notifying the main body of the situation. In any case, the squad leader is able to do what is necessary because he has a squad that has been drilled to obey his orders promptly and properly.

Another situation may be an encounter with an armored car or tank and the only thing to do is to give way in deployed formation so as to seek rough ground and keep the enemy under observation and report his movements.

Another situation may be a sudden encounter with an enemy cavalry patrol which attacks and must be met by a pistol attack. Or, an ambush from a flank may require a pistol attack to the right or left.

Another situation is where the patrol runs unexpectedly into a very heavy fire and must dash to the rear scattering or deploying as it goes, and then rallying under the second in command.

Other situations can be devised by the Platoon Commander and presented to the patrol leader so as to require him to use one out of his "bag of tricks" to meet each of these situations.

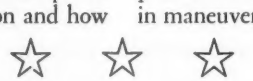
In this way the Platoon Commander can train his separate squads, first in patrol drill and second in applying that drill to various situations.

The training of the squads for *combat patrol* duty is very important because it is a special and peculiar duty. It is one thing to put out a combat patrol to guard your flank and quite another thing to have that flank properly guarded. If the command is moving, the combat patrol must know how to keep itself in proper position and how to scout the country by observation from high points or, in thick woods or brush, by sending out a pair of troopers from time to time to make short excursions into the surrounding country and then return to join the patrol.

If the command is stationary, as in a defensive position, a combat patrol must be posted in a convenient position under cover. Then it must send out pairs of troopers to make short scouts to the front, to the rear, and out farther to the flank, and return to the patrol. Many a combat patrol has permitted the enemy to move around to the rear unobserved, or to come in close to the flank before reporting the movement to the commander who sent the patrol out. Constant vigilance and constant activity is required.

It may seem unnecessary to "drill" the squad as a patrol as explained. But when it is considered that the leader must be stationed well out in front of his patrol and, therefore, must be able to signal his orders back and not have to ride all the way back before he can get his orders executed, it becomes apparent that the leader and his squad must talk the same language and that the squad must be able to execute speedily the will of the leader upon his signal or command. This requires training and an understanding by the men in the squad as to the different plays that they may be required to execute. Otherwise, there will be loss of time and confusion in trying to understand what the squad leader wants.

The "drill" is essential and should be taught before any patrol missions are given to the squad either in practice or in maneuvers.



What's New in Marching?

(Continued from page 325)

harder to hit by hostile marching columns. But the very fact that it is a convoy attracts hostile air observation and makes it a worthy target for attack aviation. If, on the other hand, we take to heart the lesson our civilian operators teach us and operate our trucks singly over routes protected from ground attack by the presence of friendly troops, we do not advertise where we are going to the hostile observation, and the target we present to him in the event he does discover the movement will not warrant bringing the attack aviation into the picture.

During the recent spring march at the school the trains were marched differently on the night march previously referred to when conditions required secrecy. Instead of being "grouped," trucks were operated singly, with lights, over three routes—all protected by the presence of troops —on parallel roads toward the enemy. S-4 dispatched individual trucks from the old bivouac at irregular intervals of not less than three minutes (one mile time-distance) between trucks. Each truck driver was given his route and directed to make no effort to gain on the truck in front of him. Traffic control posts were established at points where routes diverged. Each driver had a map, and a truck driver today who is provided with a map and a working speedometer can find his route. The hostile aviation in the problem had a mission to observe for and report all convoys, but none were discovered or reported. Asked if the observers had noted the movement of the vehicles over that part of the route used by all trucks, they reported that the movement had not been observed. Certain designated trucks, about one-third proceeded to the bivouac and entered the bivouac proper without lights. The troop column arrived later and the whole command was so well concealed that the location of the bivouac had not been discovered one hour after daylight when problem conditions ceased. Had these trucks moved as a convoy with lights, there would have been no chance of avoiding discovery, and if without lights the aviation flares would have enabled observers to pick them up on the road, with the same result.

It would appear, then, that in answer to the editor's question the only thing in marching that might possibly be considered as "new" would be this method of marching the trains. And is it new or simply an adaptation of our civilian friends' method? I think it is the latter, and prefer to stick to the old saying, "There is nothing new under the sun."

NOTES FROM THE CAVALRY BOARD

"The Cavalry Board invites any individual, whether or not a cavalryman, to submit for consideration constructive suggestions or ideas relating to new equipment, improvement of standard equipment, or to any problem or project under study by the Board. The Board will also welcome suggestions as to new problems that may properly be considered. Communications should be addressed to the Director, Cavalry Board, Fort Riley, Kansas."

60-mm. Mortar: One 60-mm. Mortar with a limited amount of ammunition of French manufacture was received by the Cavalry Board during June, for further test of its suitability for use by the cavalry as a supporting weapon, particularly for antimachine gun fire. Another mortar with pack accessories is expected to be sent here in the near future.

Browning automatic rifle, M1918A2: Tests of the Browning Automatic Rifle with bipod and butt rest as modified by the Infantry are nearing completion. This weapon is being considered as a possible replacement for the present light machine gun.

81-mm. Mortar: Tests of pack accessories for the 81-mm. mortar have been completed. The hangers which were fabricated by local ordnance personnel under direction of the Cavalry Board are designed to carry the tube, bipod, and base plate comprise the total load for one animal. The weight of the load including the cavalry pack saddle and hangers is approximately 206 pounds. Tests included packing a mortar during The Cavalry School spring march and it was found that the load was well balanced and stable. It rides well at all cavalry gaits. Preliminary investigation of a suitable pack for ammunition for this weapon is under way at this time.

Containers for machine-gun ammunition and water: A number of new type metal ammunition chests for machine-gun ammunition together with carrying cases and two water chests of new design have been received by the Cavalry Board for test to determine the desirability of replacing the standard wooden chests and present standard water chest. The new chests are much lighter in weight than the present standard.

Stirrups for McClelland Saddles: One of the horse cavalry regiments has requested authority from the Chief of Cavalry to modify the stirrup of the McClellan saddle by removing the hood and cutting down the wooden tread until it is about three inches in width. The principal arguments in favor of this modification are:

It reduces the weight of the saddle.

It provides a more comfortable tread in that a rider can shove his foot into the stirrup until the proper position is attained which is impossible, particularly in the case of a man with a large foot, with the hooded stirrups.

Arguments against the modification are:

The hood protects the foot of the rider from rain, cold, and possible injury going through brushy country.

The hood protects the foot of the soldier from possible injury due to jostling in ranks.

Investigation conducted thus far by the Cavalry Board seems to indicate that the majority of the experienced horsemen in the cavalry are in favor of the modification.

Sponges, cellulose: The Cavalry Board has recently conducted tests of a synthetic cellulose sponge, manufactured by the DuPont Company. This sponge comes in several convenient sizes and the tests were for the purpose of determining whether they might be used to replace the natural sponge for cleaning harness and saddlery in the Cavalry. Tests conducted thus far seem to indicate that they will be very satisfactory for this purpose.

Lexol leather conditioner: A compound called Lexol leather conditioner was recently tested to determine whether it could be substituted for issue saddle soap and neatsfoot oil in cleaning and conditioning leather equipment. This compound appears to be unsuitable as a cleaner but does seem to be very satisfactory for the purpose of adding the correct amount of oil and restoring "life" and pliability to leather.

Light reconnaissance vehicle: Mobility tests of the light reconnaissance car previously described in this column have been continuing as warranted by road and weather conditions. The most recent test was a comparison of the operation of the light car and the M-3 scout car in deep mud, wet slippery clay road conditions, and in deep sand. These experiments proved that the light car is superior in mobility to the M-3 scout car in the following respects:

a. Ability to negotiate wet, clay surfaced roads.

b. Ability to negotiate deep mud. Due to its light weight this car moves under its own power or can be pushed out by hand, while the heavy scout car sinks in to the axles and stops.

c. Ability to move through heavy sand.

Tests previously conducted also demonstrated that the light car has superior hill climbing ability. It also accelerates much faster than does the heavy scout car and, in general, can be said to be superior to the scout car in all around mobility.

Some observers have suggested that it might be advisable to armor some of the vital parts of this light car and to put a shield of armor in front of the driver. In short this idea represents a compromise between the experimental car and the standard scout car. It is impossible, however, to add any more weight to this car as to do so would necessitate a heavier chassis and then in turn a more powerful motor and in a short time we would find ourselves back where we started from with a standard M-3 scout car.

Book Reviews

LORD KITCHENER, by Lt. Col. H. de Watteville. Blackie & Son, Ltd. London and Glasgow. 192 pp. Price, $1.50.

The author, with bare mention of Lord Kitchener's family background and early youth, plunges at once into the military career of this noted soldier.

In reflecting on the early career of Kitchener one is impressed with one fact: the knowledge of languages is a great professional asset to the individual military man. There is no doubt that considering two men of equal attainments and capacities the one who is master of two or three languages will encounter opportunity much more frequently than the other. After all, opportunity is essential in the carving of a military career.

As Kitchener swung from one activity to another, frequently on short notice, it moves one to ponder on the old adage that he travels farther and faster who travels alone.

It is interesting to note in this volume that when assuming important duties of an administrative or organizational character, Lord Kitchener's primary objective was the development of discipline.

When taking charge of military affairs in India, he enumerated four principles on army reform which could be studied with profit by others under current conditions:

"1. That the main function of the army was to defend the North-West Frontier against an aggressive enemy.

"2. That the army in peace should be organized, distributed and trained in units and formations similar to those in which it would take the field in war.

"3. That the maintenance of Internal Security was a means to an end; namely to set free the field army to carry out its functions.

"4. That all fighting units, in their several spheres, should be equally capable of carrying out all the rôles of an army in the field, and that all should be given an equal chance in experience and training to bear these rôles."

From correspondence written several years prior to the World War, Lord Kitchener demonstrated a reluctance to assume duties in the War Office even as Chief of the General Staff, due to his belief that at that time he was personally unqualified for such affairs. His contention was that although he could exercise leadership and organize affairs in the direct capacity of actual command, in the War Office he felt that he would be compelled to compromise on many important questions through political expediency.

When war broke, Lord Kitchener was taken into the Cabinet as Secretary of State for War.

He was practically alone in his insistent views that the war would last for years rather than culminate in a few months. His great talent for organization was directed towards the transcendent expansion of the army in the face of great professional and political opposition on the ground that such elements were purposeless without available supplies and competent leadership.

The first two years of the war found French public opinion solidly confident behind the policies of Kitchener. It was on the personal invitation of the Czar of Russia to visit that country with the view of making recommendations regarding the reorganization of the Russian Army that Kitchener set off on the ill-fated voyage on HMS *Hampshire*. A hidden submarine mine in uncharted waters west of the Orkney and Shetland Islands brought this illustrious military man to an unmarked grave.

THE ARMY OFFICER'S ANNUAL REFERENCE BOOK AND 1939-40 CALENDAR. First Edition. By Captain Peter Rodyenko. Published by the author. Price, $1.00.

This reference book is essentially intended for Reserve officers, ROTC and CMTC students, while engaged in active duty. The calendar, which includes pages respectively for each month from June, 1939 through May, 1940; merely provides convenient means of recording scheduled meetings, progress in extension courses, etc.

The book is full of useful data such as the personnel of the War Department, Congressional Committees, references to Tables of Organization, and other items of equal interest. It is suitably illustrated, covering insignia of rank, uniforms, saber manual, field fortifications, and conventional signs. It contains useful references pertinent to army regulations on reserve affairs, customs of the service, inside dope on army extension school work, execution of commands, a check list for equipment to be taken to camp, data on mileage, etc.

So long as the author confines himself to factual data and the inclusion of reference data the book serves a very useful purpose. In going into more intangible subjects, many of which are supported by the author's opinion, the volume has been weakened rather than strengthened. There is a portion under the title of "Officer and Gentleman" which is about as bad as anything written on this subject which this reviewer has encountered. Comments on customs and courtesies of the service, going on active duty, and on giving commands, create a similar impression. It is believed that the author would do well in future editions to omit such portions or cover them in a fashion more in accord with the atmosphere of actuality insofar as contact with the regular army is concerned. Should data of this character be included the author might do well in adopting the style and content of Moss's accepted "Officers Manual."

JAPAN: GOVERNMENT—POLITICS. By Robert Karl Reischauer. New York: Thomas Nelson and Sons, 1939. 221 pages; map; charts; glossary. $2.00.

It takes years of study to understand the Japanese language. It would probably take just as long to thoroughly

Books for the Horseman

A Manual of Equitation (translated from the French), Cavalry School	$ .95
Animal Management, Cavalry School	.95
Famous Saddle Horses, *Suzanne*	4.50
Handbook for Horse Owners, *McTaggart*	2.75
Horse Sense for Amateurs, *King*	1.50
Horse Training, Outdoor and High School, *Beudant* (translated by Lt. Col. J. A. Barry, U. S. Cav.)	3.00
Horsemanship and Horsemastership, The Cavalry School	1.25
Horseshoeing, *Churchill*, 1933	1.20
Polo Ponies: Their Training and Schooling, *Lt. Paul G. Kendall*	7.50
Practical Light Horse Breeding, *Wall*	3.50
Principles of Equitation, *de Souza*	5.00
Riding Forward, *Capt. V. S. Littauer*	2.00
Seats, Gaits, Reactions (translated from the French), The Cavalry School	.95
Selection and Training of the Polo Pony, *Cullum*	5.00
The Art of Riding, *Lt. Col. M. F. McTaggart*	3.50
The Gaits—The Horseman (translated from the French), The Cavalry School	.95

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comprehend Japanese government and politics, and the ideology and traditions behind them. Yet the student of world affairs who seeks only a general idea of Japanese institutions and the successive oligarchies that have been responsible for the evolution of these institutions, may learn all he desires from Mr. Reischauer's compact little book.

Unfortunately its very compactness causes certain parts of the book to seem "too statistical."

Having read from cover to cover and become slightly acquainted with *shoguns, daimyos, samurai, genro,* and other unique individuals and ruling classes that have entered so largely into the growth of the Japanese state, one feels that a re-reading is necessary to absorb more of the facts packed into this posthumous study.

The author was born in Japan and resided there for some twenty years. At the time of his death during an aerial bombardment of Shanghai in 1937, Mr. Reischauer was a brilliant young political scientist at Princeton University. His widow, using notes already prepared, completed his manuscript. She is to be complimented for her contribution to this valuable little work. W. G. I.

THE RISE OF AMERICAN NAVAL POWER. By Harold and Margaret Sprout. Princeton University Press, 1939. 398 pages; illustrated; documented; analytical index; $3.75.

This book is not a technical study. It can be read as easily by a landlubber as by a seafarer. It is not a chronology of naval exploits, history of naval technology, or description of naval organization; these topics are mentioned only incidentally and briefly. Essentially this excellent work might be called an exposition, in historical form, of the conditions, institutions, events, ideas, motives, personalities, and politics which have shaped the development of American naval policy, strategy, and evolution from 1776 to 1918. Studies of this nature frequently are dull, uninteresting collections of facts and figures. This one is different. It is fascinating.

Specifically, the authors go into: (1) the problem of naval defense as envisaged by different persons, groups, and sections at each stage in the expansion of the United States; (2) the continuing historic debate over the nature and scope of the Navy's functions in peace as well as in war; (3) the arguments of successive generations as to the size and kind of navy required to perform these functions; (4) the evolution of ideas as to the principles of naval strategy and warfare; (5) the strategic and political implications of advances in naval architecture and technology; (6) the similar implications of changing ideas as to the organization, disposition, and management of the forces afloat; (7) the like implications of the problems of Navy-Department and navy-yard administration; (8) the process of formulating and enacting naval legislation within our governmental system; (9) the respective rôles of organized groups and of unorganized public opinion; and (10) the international repercussions and consequences of the rise of American naval power.

The Rise of American Naval Power is a valuable contribution to American history that can be enjoyed by everyone. This book is recommended as something that should be read, and for those interested in a military-naval library, something that should be owned. W. G. J.

UNION NOW. By Clarence K. Streit. New York: Harper & Brothers, 1939. $3.00.

This book has, in two short months, created international attention. And small wonder, for it proposes nothing less than a federal union of the democracies of the North Atlantic *now* as a prelude to an eventual world government. The purposes of this union are to prevent war by opposing to the Fascintern and the Comintern an International of Democracy, 280,000,000 strong and possessing 60% to 95% of practically every essential war material as well as overpowering military and naval forces; to end the depression through the economic advantages offered by a union free-trade area, single currency, and single communications systems; to save our liberties by constructing a superstate too powerful to be attacked and dedicated to the proposition that the state is made for man, not man for the state. This idea is developed by Mr. Streit as a sound and practical project with no obstacle to its consummation except that of overcoming national prejudices and selfishness for the general good. That this sort of obstacle has been overcome he proves by the example of the final acceptance of the American constitution by the thirteen original American colonies, and says that trends of American opinion as shown in the recent Gallup and *Fortune* polls must be studied closely before saying too hastily that it could not be overcome again. The interest of this book to Army officers, whether students of the international situation or not, lies in the author's suggestion that all defense forces be combined under a single head and general staff that would be subject to the orders of the Union government. Mr. Streit's proposal offers a basis for peace and the orderly development of civilization as we know it. Visionary? Yes; but there have been many visions in the history of man.

D. S. B.

FROM VERSAILLES TO MUNICH, 1918-1938. By Bernadotte E. Schmitt. (Public Policy Pamphlet No. 28). Chicago: University of Chicago Press, 1938. 57 pages. $.50.

For the reader who has seen the headlines jump during the past few years from one part of Europe to another, and therefore needs a sensible, accurate, and not too long review to set him straight, this pamphlet will serve admirably. Doctor Schmitt, its author, Professor of Modern History in the University of Chicago, wrote also *The Coming of the War, 1914*, which some fifteen years ago went far to set the record straight on the origins of the World War and still shares honors here and abroad with Fay's *Origins of the World War* as a standard work on the subject. The present pamphlet covers the two decades since Versailles not only concisely but clearly and readably.

L. M.

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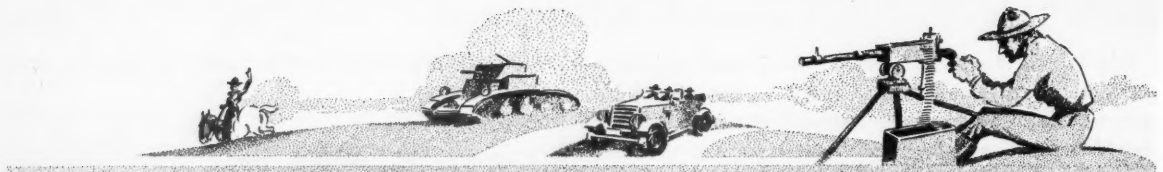

ORGANIZATION ACTIVITIES

1st Cavalry—Fort Knox, Ky.

COLONEL HENRY W. BAIRD, *Commanding*

Many problems face the First Cavalry in its preparation for the coming First Army Maneuvers. Some have been solved, others are in the process of solution. R.S.O. has completed his stock of over 300 chocks and blocks sawed out of green oak timber and weighing about 20 pounds each. The blocks are designed to restrain the more coltishly inclined combat vehicles from leaping off the flat cars en route to Plattsburg. Our overhauled Diesel engines are coming home from Texas and remain to be installed. All echelons of maintenance are working hard to put every vehicle in shape for the gruelling days ahead of us.

The regiment is unusually short of officers. Lieutenant Colonel Davis, Majors Andrus and Higgins, Captains Tompkins and Ballantyne, and Lieutenant Dodge have been transferred. The Post Staff has taken Lieutenant Colonel Imboden and Major Boon. Of the officers under orders to join, Captain Greiner and Lieutenant Teller have arrived. Lieutenant Colonel Wales and Major Harmon are expected prior to maneuvers.

The First Cavalry Band is one of the busiest organizations at Fort Knox. Being the only band at this station, its services are constantly in demand. The recent addition of a bell lyre to its instruments has proven a popular innovation.

Our armored car element, Troop "A," participated in a celebration by the V.E.W. in Owensboro, Kentucky, on June 9th and was well acclaimed. All organizations took an active part in the program for General Pedro Aurelio de Goes Monteiro, Chief of Staff of the Brazilian Army.

In addition to a keen professional interest in the coming maneuvers, all ranks are anticipating the cooling breezes from Lake Champlain as a great relief from the torrid weather we have been experiencing lately in Kentucky.

* * *

2d Cavalry—Fort Riley, Kansas

COLONEL H. D. CHAMBERLIN, *Commanding*

On April 12th the regiment held a mounted review for Colonel Arthur Holderness, who left the regiment after having commanded it for the past two years.

Under command of Lieutenant Colonel T. K. Brown, the regiment participated in the Annual Spring March and Maneuvers of the Cavalry School, during the period May 5th to 13th. The march covered a distance of approximately 145 miles. There were three night marches, the last one ending on the Fort Riley Reservation, in an attack at dawn. Ideal weather conditions and a fortunate combination of team work and leadership resulted in the march being a happy experience for the men and horses of the regiment.

On May 19th the Second Cavalry celebrated its 103d anniversary, having been organized as the Second Regiment of Dragoons May 23, 1836. The occasion was fittingly marked by a simple ceremony at the Second Cavalry Monument after which the regiment gathered near Camp Whitside for a rousing picnic.

The Second Cavalry Horseshow Team composed of Captains V. S. Shaw, A. A. Frierson and Lieutenant F. C. Bridgewater, competed in the Fort Leavenworth Horseshow, May 19, 20, and 21, 1939, with the following horses: *Yokel, Time Set, Tarzan, Eagle, Broadway Bill, Coin Collector, Dos Estrellas, Moro,* and *Blackie*.

In the Inter Unit Team Class competing against teams from Fort Bliss, Fort Clark, Fort Sill, Fort Leavenworth, and the Cavalry Equestrian Team, and the Field Artillery Equestrian Team, the 2d Cavalry finished third.

Moro, ridden by Captain Frierson, won the Equestrian Team Fund Sweepstake, and the Open Jumping for Classification "B," "C," and "D" horses. *Moro* was also a member of the Fort Riley Team in the Interpost Team Championship which won this class.

Coin Collector, ridden by Lieutenant Bridgewater, was second in the Open Jumping for Classification "A" horses in which class eighty-one horses were entered.

The last night of the Cavalry School Horseshow was notable in that the Second Cavalry contributed twice in the highlights of the show. The Second Dragoon Ride was a picture of rhythmic color. The horses and men of Troop A, who under the command of Captain John T. Ward, put on the Musical Ride, were groomed to a glistening luster. The cadenced horses and the handsome dragoons drew much applause and admiration. The last class in the show was "Barrien springen," *Dos Estrellas,* ridden by her owner Captain A. A. Frierson, furnished stimulating competition for the Equestrian Team's famous jumper *Dakota. Dos Estrellas* bowed to *Dakota* when the barriers reached the height of five feet six inches.

The following officers have been newly assigned to the regiment: Colonel Harry D. Chamberlin, Majors Alfred L. Baylies, Wilkie C. Burt, Edward M. Fickett, Harry Knight, First Lieutenants Joseph R. Ranck, James C. Blanning, Carl D. Womack, Richard A. Smith, Joseph A. Cleary.

The following officers have been relieved from assign-

ment to the regiment: Majors Guy D. Thompson, Perry E. Taylor, Captains Virgial F. Shaw, John T. Ward, First Lieutenants Loren B. Hillsinger, James E. Glattly, F. Clay Bridgewater, Lawrence E. Schlanser, Albert A. Matyas.

1st Squadron, 3d Cavalry—Fort Ethan Allen, Vt.

LIEUTENANT COLONEL THOMAS H. REES, JR.,
Commanding

There was a great deal of interest displayed during the winter in small bore rifle and pistol matches. First Sergeant Blazejevski, Troop A, won first place for the "old rifle and old pistol" shot, and Corporal Fay, Troop B, won first place for the "new" pistol shot in the 3d Cavalry Inter-Troop Small Bore Rifle and Pistol Matches held during January and February.

Troop A, under Captain Jadwin won first place in the N.R.A. Military Company Matches for the Pistol and won thirteenth place in the rifle competition. The team was composed of First Sergeant Blazejevski, Sergeant Wood, Corporal Hazel, Privates First Class Gormley and Pouliot, and was coached by Staff Sergeant Fardy.

In the Cavalry Inter-Regimental Rifle and Pistol Matches, Private First Class DeMello of Troop A won the Individual Rifle Championship and First Sergeant Blazejevski, also of Troop A won second place.

First Sergeant Blazejevski, Corporal Hazel and Private First Class DeMello, all of Troop A, have gone to participate in the National Matches to be held at Camp Perry, Ohio.

The Squadron Horseshow Team carried on its winning streak of last fall at the Montreal and Boston Horseshows by making an excellent record at the 1st Company, Governor's Horse Guard Show in Hartford, Conn., on May 4th, 5th, and 6th, taking one or more ribbons in every class entered. The Squadron horses won a total of twelve trophies and twenty-four ribbons.

High score performances were made by *High Time,* ridden by Lieutenant Colonel S. V. Constant, and *Black Beauty,* ridden by Lieutenant R. E. McCabe, each winning five ribbons. In the classes for enlisted men, the high scores were made by *Black Beauty,* ridden by Sergeant Wood, and *Blue Bell,* ridden by Private First Class Miscik, each winning two ribbons.

The Squadron marched to its summer camp near Underhill, Vermont, on June 5th where it was engaged in its own field training and the training of the 315th Cavalry.

On July 4th the Squadron held its annual Outdoor Horse Show at the outdoor horseshow ring. Lieutenant Colonel Rees was the winner of a trophy given the Squadron by the 17th Duke of York's Royal Canadian Hussars for annual competition by the officers of the Squadron, as well as the Colonel Hopkins trophy. The officers' scores on being totaled, showed Colonel Rees the winner of the officers' classes for the show; Lieutenant Colonel S. V. Constant finished second; and Captain T. C. Wenzlaff and Lieutenant T. B. Harrington finished third and fourth respectively. Music was furnished by the Seventh Field Artillery Band.

Event No. 1. Musical Chairs: 1st—Private Zeleski, Troop B. 2d—Private Smith, Troop A. 3d—LaBombard, Troop A. 4th—Derosiers, Troop B.

Event No. 2. ROTC Jumping: This was a jumping event for cadets from Norwich University and Massachusetts State College: 1st—Cadet Foster, Massachusetts State, on *Masterpiece.* 2d—Cadet Slater, Massachusetts State, on *Romeyn.* 3d—Cadet Smith, Norwich, on *Reid.* 4th—Cadet Tobey, Massachusetts State, on *Bush.*

Event No. 3. Machine Gun Contest: This event was a machine gun contest between two machine gun crews from each troop. With the guns on the packs, the gun crews raced from one end of the ring to the other, going over a jump on the way; dismounted, set up the gun on a firing line, fired five rounds of blank ammunition, repacked and raced back, jumping the hurdle on the way: 1st—Gun Crew Troop A—Pfefferkuch, Daniels, and Fortuna. 2nd—Gun Crew Troop B—Cummings, Dufresne, and Couturier.

Event No. 4. Privates Jumping: 1st—Private Mallows, Troop A, on *Lady.* 2d—Private Gormley, Troop A, on *Blue Boy.* 3d—Private Drowne, Troop B, on *Ploughboy.* 4th—Private Ross, J. N., Troop A, on *Lee.*

Event No. 5. Mile Race: 1st Private Sprano, Troop B. 2d—Private Kenty, Troop B. 3d—Private Potty, Troop A.

Event No. 6. N.C.O. Jumping: 1st—Corporal Regnier, Troop A, on *Banjo.* 2d—Corporal DiPalma, Troop B, on *Beatrice.* 3d—Sergeant Wood, Troop A, on *Come On.* 4th—Corporal Scott, Troop B, on *Chubby.*

Event No. 7. Tandem Ride: A squad from Troop B demonstrated a musical ride with pairs of horses in tandem. The men showed their complete control and mastery of their mounts.

Event No. 8. Officers' Chargers: 1st—Lieutenant Colonel Rees on *High Time.* 2d—Lieutenant Colonel Constant, on *Chien Lung.* 3d—Captain Wenzlaff, on *Millie Russell.* 4th—Lieutenant Harrington, on *Reckless.*

Event No. 9. Broom Polo: Won by Troop B over Troop A. Score 2 to 0.

Event No. 10. Officers' Jumping: 1st—Lieutenant Colonel Rees, on *High Time.* 2d—Lieutenant Colonel Constant, on *Razor Back.* 3d—Captain Wenzlaff, on *Millie Russell.* 4th—Lieutenant Harrington, on *Reckless.*

Event No. 11. Musical Ride: Troop A with lances flashing and pennants and plumes fluttering, rode through an intricate and beautiful series of maneuvers.

The Squadron is at present engaged in the training of CMTC students and on July 11th a detail from Troop B, commanded by Captain J. K. Mitchell will leave for Schuyler Falls, New York, where they will set up a camp

for the Squadron in preparation for the First Army Maneuver.

7th Cavalry—Fort Bliss, Texas

COLONEL WILLIAM W. WEST, *Commanding*

During the past two months the regiment has been busy training the ROTC and the Organized Reserves as well as co· ducting its own target season.

On August 12th, the command less a small housekeeping detachment, moved to the Fort Bliss Target Range, New Mexico, to conduct known distance firing which we expect to complete on or before September 9th.

The Regimental Commander was highly pleased to receive a commendation from the Division Commander for the splendid appearance and excellent performance of the regiment during the review and demonstration held for General Monteiro, Chief of Staff of the Brazilian Army, who paid a visit to this post during the latter part of June. Commendable comments were received from several other sources which show that the regiment is ready for any mission.

Fifty-one (51) remounts have just recently been received from a shipment of six car lots to the Second Cavalry Brigade. These remounts are purchased animals and are uniformly of good quality and type, having more than an average amount of breeding. A training program covering the fall and winter seasons, is contemplated with the animals to be assigned to troops at its conclusion sometime early next spring. Several of the more outstanding remounts have been assigned to noncommissioned officers for individual training and a squad of twenty selected men, under the supervision of Captain Ladue, is working the remainder daily. Progress to date is most gratifying.

Due to changes in assigned personnel, several changes will be made in our polo team but we are looking forward to an active (and we hope) successful season.

The regiment returned on May 27th from its annual practice march in the Sacramento Mountains. After leaving the west Texas desert behind on the third day, the entire command enjoyed the cool breeze, green grass, and tall pine trees which are rarely encountered by members of the garrison.

Very shortly after our return from the Annual Practice March, representatives of the regiment participated in the Post Horseshow, with most satisfactory results. In Class I, for Novice Riders, Private Frye, Troop B, riding the veteran *Hank,* took the blue, and Corporal Wise, Troop E, on *Show Baby,* took third, jumping off at 4 feet three inches. First Sergeant Shrout, of the Machine Gun Troop took second in the Green Polo Class with *Gussie,* and Major Haydon took fourth with his chestnut mare, *Solitaire.* Incidentally, *Solitaire* had never seen a polo stick before, but behaved like a veteran of a dozen tournaments. Lieutenant Grubb placed second in the Fault-and-Out for lieutenants, and Private Taber, Troop B, took second in a large field in Horsemanship for privates.

Captain Finnegan and a squad of five (5) enlisted men left June 2d to join the Cavalry Rifle and Pistol Team for the National Matches at Camp Perry.

The entire regiment was grieved to hear of the death of Lieutenant William M. Lewis at Tucson, Arizona, on July 3, 1939. Lieutenant Lewis had just finished a year of active training with the regiment. He was one of the most popular and outstanding Thomason Act officers that had ever been with the regiment.

The past two months has seen many changes in the officer personnel of the regiment. We have lost the following: Lieutenant Colonel Wagner, Major Williamson, Captains Knudsen, Bixel, Pegg, and DePew, First Lieutenants Growdon, Murdoch, Fiore, Boyle, and Heckemeyer; and gained Lieutenant Colonel "Terry" Allen an Old "Garry," who joins us from the Cavalry School. Captain Mudgett has joined from Maxwell Field, Ala.

The regiment was glad to welcome the first Thomason Act officer to gain a regular commission in the Cavalry from Fort Bliss. Lieutenant Joe Ahee who was with us last year, reported for duty again on July 1st, as a brand new permanent second lieutenant.

Due to the stress of training and getting ready for General Monteiro's visit, celebration of Regimental Day was postponed from June 25th to July 29th. Telegrams from General Herr and other friends of the regiment was one of the highlights of the day.

8th Cavalry—Fort Bliss, Texas

COLONEL INNIS P. SWIFT, *Commanding*

On May 23d the 2d Squadron was turned out to escort Major General Brees, Corps Area Commander, Attorney General Murphy, and J. Edgar Hoover, FBI, who were touring the country by plane, inspecting various army posts.

A dismounted retreat parade was held on May 26th honoring Major Carl B. Byrd, who departed on leave of absence June 7th, to await retirement from active service. Major Byrd will make his home in Montana.

At 7:15 AM on the morning of May 29th, the Alert Alarm was sounded, and the entire garrison was turned out under the provisions of Alert Plan for immediate field service. The regiment performed all the duties incident to departure, and was formed on the review field, ready to move in one and one-half hours after the sounding of the alarm.

On May 30th, troops of the regiment turned out four firing squads with buglers, who attended memorial services at various cemeteries in El Paso. Troop "E" furnished a platoon and with the standards of all units of the post, attended services at the Post Cemetery.

The regiment left the post for the Fort Bliss Target Range in Dona Ana County, New Mexico, on June 1st, for the Regular Target Practice Season, returning to the post on June 20th. Following are the results of Regular Practice Season, with the rifle:

Troops	"A"	"B"	"E"	"F"	Hq. & Serv.	Totals
Experts	6	9	11	16	9	51
SS	26	23	8	23	12	92
MM	16	24	27	9	18	94
Unqual.	0	5	3	0	6	14
Total Firing	48	61	49	48	45	251
Pct. Qual.	100.	91.8	93.9	100.	86.7	94.4
Average Score	209.7	204.2	203.8	215.0	202.6	206.9

High score was 235, made by Private First Class Frank T. Bean, Troop "E." Score of 232 was made by Private R. Moore, Troop "A"; Corporal H. G. Newpher, Jr., Troop "B"; Corporal S. S. Osowski, Troop "E," and Private J. E. Noble, Troop "F."

This is an improvement of 3.1 in the percentage qualified over the previous year.

In firing of the heavy machine gun, the Machine Gun Troop obtained the following results:

Expert Gunners, 14; First Class Gunners, 18; Second Class Gunners, 5; Unqualified, 3; Total Firing, 40; Percentage Qualified, 92.5; Average Score. 177.7.

Light machine gun platoons did not have sufficient time to complete the Field Firing Course, and will return to the Range on July 5-8 inclusive to complete their firing.

During the week June 5-10, the following Thomason Act Reserve officers who had been on duty with the regiment since July 5, 1938, departed on terminal leave of absence: Second Lieutenant Bert M. Ruud, Irwin, Idaho; Second Lieutenant Lawrence M. Crow, Waco, Texas; Second Lieutenant William A. Thompson, Dallas, Texas; Second Lieutenant Charles F. Dibrell, San Antonio, Texas, and Second Lieutenant Walter H. Boyd, Jr., Long Beach, California.

The regiment announces with great regret the departure of the following officers to new stations, as indicated, on termination of leave of absence:

Major Horace W. Forster, having served with the regiment since October 16, 1936, detailed to duty with the ROTC at Mattoon, Illinois.

Major William B. Bradford, having served with the regiment since January 6, 1937, detailed to Staff and Faculty, The Cavalry School, Fort Riley, Kansas.

First Lieutenant William V. Martz, having served with the regiment since September 30, 1935, detailed to Pentathlon Try-outs, West Point, New York.

Second Lieutenant John C. F. Tillson, III, having served with the regiment since September 14, 1938, detailed to Pentathlon Try-outs, West Point, New York.

The regiment also regrets to announce that Captain William J. Reardon was relieved from command of Troop "A" and assigned to Headquarters Troop, 1st Cavalry Division, on June 30th. Captain Reardon has been with the regiment since August 28, 1937, this being his second tour of duty with the 8th Cavalry.

Captain Charles G. Meehan is assigned to the regiment as of July 1, having been relieved from command of Headquarters Troop, 1st Cavalry Division, which he has commanded for the past two years. Captain Meehan takes over command of Troop "A."

On June 12th Lieutenants Bruce Palmer, Jr., Roy W. Cole, Jr., and Robert E. O'Brien, Jr. were promoted to the grade of First Lieutenant.

The Chief of Staff, Brazilian Army, accompanied by Major General Brees, Corps Area Commander visited the post on June 26th. On the occasion the entire division passed in review. After the review the 2d Squadron gave a demonstration of dismounted attack, followed by hasty action on the part of the Provisional Machine Gun Squadron, composed of the machine gun troops of the 7th and 8th Cavalry.

A reception was held at the Officers' Mess, after which the 1st Squadron, Captain William J. Reardon commanding, with massed buglers of the 7th and 8th Cavalry and the 82d Field Artillery formed a Guard of Honor at the Officers' Mess, and from there escorted the Brazilian Chief of Staff and his party to Pershing Gate on his departure from the post.

After ten years of faithful service, and continuous effort, *Fritz* (German shepherd) has been appointed to the grade of Regimental Sergeant Major. *Sergeant Major Fritz* has been a member of Headquarters and Service Troop for the past ten years, during which time he has never missed a formation of his own accord. As he is not permitted to attend reviews, it is necessary to put him on leash.

During the time he is on leash he goes into deep mourning. It is creditable to note that *Sergeant Major Fritz* has never taken a furlough, or been on sick report during his service.

Sergeant Major Fritz has made all practice marches and maneuvers, always hiking along with the head of the horse column. Upon becoming tired, he is placed in the command car, but with the first halt of the car, he is out with a bound, and again ready to fall in with the mounted element.

For the past few years *Sergeant Major Fritz* has been a regular attendant at First Sergeants' Call, and makes it his duty to check up on all the Regimental Headquarters offices daily, to see that all office personnel is on the job.

11th Cavalry—Presidio of Monterey, California

Colonel Homer M. Groninger, *Commanding*

The Seventh Annual Presidio of Monterey Horse Show was held April 28, 29 and 30, 1939. All the classes were held on Soldier Field except the Working Hunter Classes which were shown over the Del Monte Hunter Course. Both are ideal for the purpose and these splendid locations helped materially in making the show a success.

A total of 31 classes were held. Hunters, jumpers, dressage, chargers, troopers mounts, artillery, polo, pack and road hacks, all had a chance to prove their worth.

Many civilian horses competed. Some of the finest horses in California and Nevada were entered and competition was keen from start to finish.

Three exhibitions were given; a musical ride and a

monkey drill exhibition by a selected group from the 2nd Squadron, and an acrobatic act by Corporal Karr, Troop "E" and his dog Trooper.

Lieutenant Colonel William H. Dean, V. C. and Major Frank L. Carr, Q.M.C. were the judges and needless to say did an excellent job.

The weather was ideal and record crowds were in attendance each morning and afternoon.

The 11th Cavalry took the field for its annual practice march on May 12th. It camped in the vicinity of Watsonville, Salinas, San Juan Bautista and Soledad, arriving at Camp Ord on May 17th. The period May 18th to June 2nd was devoted to tactical exercises and the Corps Area Commander's tactical inspection. The tactical inspection of the 11th Cavalry and the 2nd Bn., 76th Field Artillery took the form of a wide envelopment, as part of a larger force, of an enemy Infantry Division's Flank. The success of this operation, against an outlined enemy, resulted in satisfactory training ratings for the two units involved.

The exhibition platoon of the 11th Cavalry, Commanded by Captain Alexander George, participated in the Rose Festival, late in May, in Portland, Oregon and in the California Rodeo at Salinas in July. It is scheduled to perform in Oakland, California, in August during the American Legion Convention and during the Monterey County Fair in September.

This exhibition team, composed of selected men of the 2nd Squadron, 11th Cavalry, has received universal praise for its presentation of a Musical Drill, Monkey Drill and Military Demonstration and has resulted in a flood of requests from many other towns on the West Coast, and even in Montana, for its appearance in local fairs, rodeos and celebrations.

The movement of this platoon to Portland was accomplished by rail, as will be done when it goes to Oakland. The movement to Salinas was effected by marching (20 miles).

The regiment has been very busy with Summer Camps since June 3rd when 150 Reserve Officers reported at Camp Ord for 2 weeks training. 340 ROTC Students arrived June 15th for their Annual Training. The CMTC opened on July 1st with 1,200 trainees and 1,200 Reserve Officers are expected at Camp Ord on August 12th for the main Reserve Officers Camp. In addition to the above Summer Training Camp duties, a number of officers of the regiment have been detailed to participate in the Fourth Army CPX to be held in San Francisco, in August.

The U.S.S. *Philadelphia,* flagship of Admiral Forde A. Todd, Commander of Cruiser Division Eight, visited Monterey from July 1st to 5th. Troops of the 11th Cavalry participated, with detachments of sailors and marines and patriotic and civilian organizations in the Fourth of July parade through the streets of historic Monterey. The parade was reviewed by Admiral Todd, Captain Jules James, U.S.N., in Command of the Cruiser *Philadelphia,* Colonel Groninger and the three local mayors.

During the stay of the *Philadelphia* in port over 100 sailors were taken on a horseback ride by enlisted men of the post and the crew was invited to attend two enlisted men's dances at the Presidio Recreation Center. The 11th Cavalry Baseball Team defeated the Navy Team in an interesting game at the Monterey Ball Park. Most friendly relations existed between the two brother services during the entire visit of the Navy; each interested in learning of the life and duties of the other.

The members of the Officers Club entertained the officers of the U.S.S. *Philadelphia* and their wives on July 3rd with a horseback ride and barbecue lunch in Del Monte Forest and were in turn received aboard the cruiser on July 4th for a tea dance, which culminated a very busy and extended week-end.

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12th Cavalry (Less Second Squadron), Fort Brown, Texas

COLONEL ARTHUR E. WILBOURN, *Commanding*

Since the last publication of Fort Brown activities in The CAVALRY JOURNAL, there have been a number of changes in the personnel of the post. Colonel Donald A. Robinson has been relieved as Regimental Commander and assigned to Fort Bliss as Chief of Staff of 1st Cavalry Division. Colonel Arthur E. Wilbourn has arrived from duty as Chief of Staff, Cavalry District, San Antonio, Texas, to take command of the regiment.

Lieutenant Colonel Wilson T. Bals has been detailed on General Staff duty, 7th Corps Area, and departed May 11, 1939; Major Otto R. Stillinger to Detroit for duty with the National Guard; Captain James H. Walker was ordered to Washington to the War Department General Staff; First Lieutenant Ewing C. Johnson to Camp Perry for the National Rifle Matches then detailed in the Signal Corps with station at Fort Monmouth for duty as student; Major Lois C. Dill will be leaving the last of July for the Quartermaster School.

The following officers have been assigned to Fort Brown but have not yet arrived: Lieutenant Colonel Eustis L. Hubbard, Cavalry; Lieutenant Colonel Ralph I. Sasse, Cavalry; Captain Clarence K. Darling, Cavalry; Major Ernest C. Adkins, QMC.

During the third week of April, the troops of the post made a five-day practice march within a 30-mile radius of Fort Brown. Although, the hike seemed like a picnic to the veterans of the Toyahvale maneuvers and the Army maneuvers of last year, all of the men did get valuable training in preparation for the Cavalry Division Maneuvers to he held this fall.

During June, Troops "A" and "B" each had a week's vacation from military duties and thoroughly enjoyed the fishing and swimming at Del Mar Beach. Headquarters and Service Troop has just returned from their rest camp on Padre Island.

The target season is in full swing now. Machine Gun Troop fires daily on the range near the Post. Troops "A" and "B" are out at the Boca Chica target range engaged in rifle and light machine gun firing. Mounted and dismounted pistol firing was completed in May.

Troop "B" won the Post baseball championship from Headquarters and Service Troop early in June. Then a Post Team was organized which has won every game played with civilian teams from the valley towns. Fort Clark, Fort Ringgold, and Fort McIntosh have sent their baseball clubs to Fort Brown for visiting games which will be returned.

Along with the baseball, we have been holding a boxing tournament which has now reached the final stage. Every two weeks bouts are held to determine the winners of the various weights, both by troop teams and for individual championships. The caliber of the fighters is indeed high now that the preliminaries are finished, and good sized crowds cheer the men, win or lose.

On June 30, Master Sergeant Charles O. Doepel, Headquarters and Service Troop retired after completing 30 years' service.

13th Cavalry—Fort Knox, Kentucky

COLONEL CHARLES L. SCOTT, *Commanding*

The regiment wishes to congratulate Lieutenant Markle and the 13th Cavalry Rifle and Pistol Team for winning first place with the pistol and second place with the rifle in the 1939 Cavalry Rifle and Pistol Matches. The regiment is proud of this performance.

The annual tactical inspection by the Corps Area Commander was held on May 25th and 26th. The inspection consisted of a series of tactical exercises involving Infantry and Mechanized Cavalry, with supporting Artillery. The exercise between the 10th Infantry and the 13th Cavalry was particularly instructive and demonstrated methods of attacking Infantry marching columns and dispositions of Infantry and Mechanization weapons to protect the marching column.

All troops of the regiment completed the target season

13th CAVALRY RIFLE AND PISTOL TEAM

Left to right, top row: Private First Class Tom Bohannon, Troop C, 13th Cavalry. Private First Class Woodrow W. Cunningham, Headquarters Troop, 13th Cavalry. Private First Class Ezra L. Wilson, Troop A, 13th Cavalry. Private First Class Harmon W. Tusten, Troop A, 13th Cavalry. Private First Class Stanley Collins, Troop E, 13th Cavalry. Corporal Burley C. Clark, Troop C, 13th Cavalry.

Lower row: Corporal F. Green, Troop B, 13th Cavalry. Sergeant William G. Betts, Troop B, 13th Cavalry. First Lieutenant Norman K. Markle, 13th Cavalry. Corporal Harvey P. Watson, Troop A, 13th Cavalry. Sergeant Albert F. Stank, Troop E, 13th Cavalry.

during the month of June. The new qualification machine gun course for mechanized Cavalry was fired for the first time and much interesting data gathered for use in possible subsequent modification of the course.

On the night of June 22-23, the regiment enjoyed an interesting maneuver against the 107th Cavalry, Ohio National Guard. The horse and mechanized soldiers had a mutual respect for each other and the training resulting from this exercise was extremely beneficial to both sides.

The visit of the Brazilian Chief of Staff, Major General Monteiro, was an occasion for a mounted review in which the regiment participated. This was followed by a tactical exercise in which the 13th Cavalry fired all its weapons, 50 caliber, 30 caliber, Thompson Sub-machine guns, and mortars—all using live ammunition.

The regiment welcomes Lieutenant Colonel A. D. Surles, Captain R. L. Land, Lieutenant D. L. Hollingsworth, and regrets the departure of Captain John H. Claybrook, Jr.

26th Cavalry—Fort Stotsenburg, P. I.

COLONEL ROBERT BLAINE, *Commanding*

In May the regiment completed annual target practice with the following results:

Rifle	98.64%
Pistol Mounted	99.62%
Pistol Dismounted	96.89%
MG (Heavy)	90.00%
MG (LMG)	99.15%

The highest score with the rifle, 244, was made by Private First Class Quintin deOcampo, Troop "A." Private Roque Alejo, Troop "B," made 228 for the highest score in the regiment for men firing course "A" for the first year. The first squadron qualified 100% with the rifle and the second squadron had one man who failed to qualify.

The antiaircraft range in Second Crater and the light machine gun range in Pistol Gulch are new installations at Fort Stotsenburg. We are very fortunate in having these new and up-to-date training facilities.

Early in May, Captain Clyde A. Burcham with Machine Gun Troop and the Pack Train of Headquarters Troop completed a new pack trail from Camp Sanchez via Sante Fe, Maguisguis—Botolan—O'Donnell, returning to Stotsenburg via Camp 4 and the Spanish Cut Trail. They also completed another trail from Fort Stotsenburg via Artillery Crossing—Storm King—3d River to Camp 5. This new trail shortens the marching time from Stotsenburg to Camp 5 by more than one hour.

The Manila Polo Club held their annual Horse Show on May 20th in Manila. A large number of entries from the regiment participated in the show. Captain Disney, Lieutenant Lichirie, Miss Sally Wilson, and Captain Forde garnered more than their share of honors. To Captain Disney went the honor and trophy for the best horseman participating in the show.

The 26th Cavalry has completed a very enjoyable polo season, although scores were not always favorable. The teams, senior and junior, are now composed mostly of green (but enthusiastic) players, since the departure of Captains Barnes and Ridge. The roster now reads: Lieutenant H. H. Howze (Team Captain), Captain Paul Disney, Lieutenants Haines, Alger, Lichirie, Rhoades, Bartlett, Arnette, and Barker. The post was host to the Sports' Week tournaments of eight competing teams, the senior division (all about ten goals handicap) furnishing top-flight matches. The Los Tamaraos Club White team won. Visiting players of note: Lewis Brown, Peter Perkins, Bill Andrews, Angel, Juan and Manolo Elizalde, all handicapped at three goals or better.

Other results:

Christmas Tournament (vs. 24th FA): won by 26th Cavalry, three games to none.

February 20-26, Round Robin Tournament: At Manila Polo Club; 26th Cavalry defeated Department Headquarters, lost to Manila Polo Club.

April 1: 26th Cavalry defeated Los Tamaraos 6 goal team, 8 to 3 at Los Tamaraos Club.

April 8: 26th Cavalry lost to Los Tamaraos 10 goal team, 9 to 3.

April 27: 26th Cavalry defeated British 26th Royal Artillery from Singapore, 11 to 2.

The regimental teams managed airplane transportation to Manila and return for each game of the Leonard Wood High Goal, Kenneth Day Low Goal, and Selph Cups played from May 2d through May 16th.

The senior team was eliminated immediately from the high goal; the junior team, after two wins (from Los Tamaraos and Department Headquarters) was eliminated in the final of the low goal by Manila Polo Club; Stotsenburg (with Lieutenant Hunter Harris, A.C., added to the 26th Cavalry players) won the Selph Cup.

The injuries of Captain Barnes (broken collar bone) and Lieutenant Howze (sprained knee) seriously hampered the teams in this last group of tournaments. Next year, with luck in bringing along new ponies, it is expected that the 26th Cavalry can place first class low-handicapped teams on the field that will give a better account of themselves than before. We have young, willing and aggressive players coming up and that's what it takes.

The Ancient and Aromatic Order of Balugas of Pinatubo has received forty-two new members. Early in May the 26th Cavalry were hosts to a party of enthusiastic explorers and mountain climbers. For four days these intrepid explorers hiked and explored to their heart's content. All of them climbed to the top of Mount Pinatubo and some made side trips including the one to Dalanaoan and the China Sea.

Colonel Edward H. DeArmond, Chief of Staff, Philippine Department and Lieutenant Colonel Henry C. McLean, Department G-2, were among the guests from Manila.

On May 29th, the Scout Car Platoon escorted the Hon-

orable Manuel Quezon, President of the Commonwealth of the Philippines to a post review in his honor. After the review a number of the officers of the garrison were entertained at a luncheon at the Philippine Army Training Camp at Camp Dau. President Quezon and General Douglas MacArthur were guests of honor.

The development of a new horseshow and jumping area is well under way. The planting of hedges and trees has been started and by the end of the rainy season this installation will be one of which any cavalry post should be proud.

The regiment is pleased to have Majors Frank Nelson and Heywood S. Dodd and Captain H. W. Stevenson as new members. We regret the loss of Captains Ridge, Farwick, Heacock, and Taylor, whose tours of foreign service terminate with the July sailing of the USAT *Grant*.

Our regimental commander for the past two years, Colonel Clarence A. Dougherty, leaves the regiment in July for duty at Headquarters, Second Corps Area. It is with sincere feelings of regret that we shall soon bid him adieu.

Colonel Robert Blaine, Captains Vance and Trapnell, First Lieutenant "Bill" Chandler and Second Lieutenant R. B. Praeger will be arriving on the July transport. We are pleased to welcome them into the 26th Cavalry.

111th Cavalry—New Mexico National Guard

COLONEL CLYDE E. ELY, *Commanding*

All troops of the regiment recently participated in a five-man team, shoulder to shoulder, rifle match at Camp Luna. The teams were assembled there for the purpose of selecting the state team to attend the National Matches at Camp Perry this fall. Teams were also present from the various units of the 120th Engineers and when the smoke—and dust—cleared away it was found that the winning team was from Troop E of Deming with a score of 728. Two, and perhaps three, of the members of this team will be selected for the state team.

The annual rifle and machine gun firing has been nearly completed and the results so far have been gratifying. It is hoped that the 111th Cavalry can step up one notch this year to first place instead of second, and win the coveted Pershing Trophy awarded annually by the National Guard Association to the Cavalry Regiment having the highest score for the entire target practice season.

The forty-odd remounts received in January of this year have turned out exceptionally well. Their condition upon arrival was excellent, most of them were gentle and all have taken their training in a satisfactory manner. They were badly needed in the regiment and have proved to be a distinct asset.

With the field training period nearly at hand all members of the regiment are looking forward to being assembled again at Camp Luna for two weeks in August.

112th Cavalry—Dallas, Texas

COLONEL CLARENCE E. PARKER, *Commanding*

"Hurrah! for Troop F at Tyler, Texas." The platoon from that troop was recently announced the winner, in Regimental orders, of the Cavalry Leadership Test For Small Units that has been conducted in this regiment since October 16, 1938. This platoon (see cut), commanded by Lieutenant Manley E. Hood, deserves great credit for winning this keenly contested competition. The race was very close from start to finish, as the ratings show, but Lieutenant Hood and his troopers were able to nose out the other platoons by a very close margin. The Machine Gun Troop Platoon, commanded by Lieutenant Lloyd L. Leonard, stood second, and since there is a prize for the privates of the runner up platoon, it will receive second money.

This Platoon Test was patterned after the Drapher Trophy Test, conducted in the Regular Cavalry, but covered a much longer period of time and was so arranged that every squad in every troop had a chance to win a place on the composite platoon that competed in the final phase for the big money.

Colonel Parker, who was keenly interested in the test was very much gratified at the training results it produced. Many times during the progress of the test he drove 300 miles by automobile to be present at the test of a platoon.

All the lieutenants, who competed, state that they derived a world of benefit from the test, especially in leadership and the basics of cavalry, which were the objectives. Lieutenant Phillip L. Hooper, Troop E, states: "I received more training from commanding a platoon in the test than from all the correspondence courses I have completed to date."

The Final Phase of the Squad Test, that has been conducted, in the Medical Detachment, during the past Armory Training Period, was completed on 24th and 25th of June. The Final Test consisted of a march, a camp, and an Individual Phase.

Sergeant Jesse E. Williams and his 2d Squad won over the other squads of detachment by a close margin.

Major Waldo B. Lasater, Commanding Officer, of the Medical Detachment was much gratified at the initiative this test developed in his noncommissioned officers and he made the camp and march with one of the squads during the final phase.

The Individual Test, to determine the best all around bandsman in the Band, 112th Cavalry, during this Armory Training Period, was completed as scheduled on June 19th.

This competition produced great results from a training standpoint and despite the fact that the Band Leader thinks his musicians are too "temperamental" for competitions, this test proved that some of his men, even though "temperamental," can be excellent soldiers as well as musicians.

The final ratings show that Sergeant Louis McDaniels and Sergeant H. J. Sory, Band, 112th Cavalry, tied for

COMPOSITE PLATOON OF TROOP F, 112th CAVALRY, WINNER 1938-1939 PLATOON TEST

Left to right, sitting: Pfc. Joseph E. Kelly, Pfc. Charles M. Yancy, First Lieutenant Manley E. Hood, Sgt. Joseph W. Leggette, Cpl. John C. Denboney, Cpl. Weldon Willis, Pfc. Henry J. Grant, and Pfc. Wilbert Willis.

Left to right, standing: Pvt. Billy Burke, Pfc. Joe B. Knight, Pfc. John C. Kelly, Jr., Pvt. George W. Rolston, Pvt. Thomas F. Caldwell, Pfc. Moses H. Knight, Pfc. Fred Smith, Pfc. J. C. Fielder, Pvt. Thomas J. Hawkins, and Pvt. Desmond D. Hitt.

first place with total scores of 172 points out of a possible 200.

The cash prizes to the winners of the above mentioned competitions will be presented at a special regimental parade, to be held at Camp Wolters, Texas, on July 15, 1939.

Colonel Parker was tickled to death to see the regiment on the Honor Roll of regiments with 100% membership in the Cavalry Association, published in the last issue of the "Cavalry Journal." The old man correctly demands that all his officers be active members of the association, and has stated many times that he feels it is the duty of every Colonel to have his regiment 100%. A troop commander was heard to remark the other day in giving instructions to his new lieutenant: "If you want to please the old man, join the Cavalry Association at once."

On June 11th, the Regimental Command and Staff and the Headquarters of all Squadrons and troops participated in a Command Post Exercise. Through the kindness of Lieutenant Colonel Albert S. Johnson, Regimental Executive, the entire top floor of the Southern Union Gas Company Building, with its air-cooled offices, telephones, etc., were turned over to the regiment for the exercise. "Many thanks, Colonel Johnson."

The subject of the CPX was Training Management and the war time situations of the problem were so drawn as to require the preparations of Programs, Schedules and Field Exercises.

The procedure was as follows: The regimental command and staff, commencing in the wee early hours of the morning, had the regimental training program and schedule completed by the time the squadron and troop headquarters arrived. Based on the regimental program and schedule the squadrons and troops prepared their programs, schedules, and field problems.

The regiment had 100% attendance at this CPX and as a result much valuable training in Training Management was received, and also the regiment goes to camp this year with all of its programs, schedules, and field exercises prepared and complete, down to include the platoon.

62d Cavalry Division
305th Cavalry—Philadelphia, Pa.

COLONEL VINCENT A. CARROLL, Cav.-Res.,
Commanding

Under the National Defense Act of 1921 there were to be six reserve divisions of cavalry. The 62d was assigned to the Third Corps Area and the 305th Cavalry embraces eastern Pennsylvania, including the city of Philadelphia.

Colonel John C. Groome, who will be remembered as the man who organized the Pennsylvania State Police,

was the first regimental commander. It was due to Colonel Groome's efforts that relations were established with the First City Troop of Philadelphia and that the regiment was granted the privilege of using their armory and mounts. These cordial relations have increased with the years and have never been stronger than at the present time. Captain John C. Groome, Jr., formerly a member of our regiment and son of first commanding officer, is now Captain of the First City Troop.

The 305th owes its present high degree of efficiency to the fact that the First City Troop has extended it so many favors and privileges in the past.

Started on the right course by Colonel Groome, the inspiring leadership of Colonel William Innes Forbes, Matthew F. James, and Vincent A. Carroll has further increased the prestige and development of the regiment.

The five regular army unit instructors have been exceptional men of diversified talents and each has left the stamp of his personality on the regiment. Lieutenant Colonel Howard Smalley was the first and was followed by Major John M. Thompson, whose untiring activities considerably broadened the activities. Major Charles L. Clifford especially encouraged self expression of the officers themselves. Major Norman E. Fiske's detail was cut short owing to his being called to Ethiopia as military observer. Under the aegis of our present instructor, Colonel Arthur H. Wilson, the quality of horsemanship and the general caliber of training have attained even greater heights.

The annual activities of the regiment include a noon luncheon and conference once a week, a two-hour period of mounted drill, equitation and pistol and rifle marksmanship at the armory each week, and open horse show every spring, two tactical rides over a week-end every year, not to mention dances, formal dinners, and other varied social activities. All of the foregoing are planned and executed by the officers of the regiment assisted by the unit instructor.

Each year the regiment sends its full quota of officers to active duty with the Third Cavalry at Fort Belvoir, Virginia. The performance at these camps is the real test of the value of the inactive duty training, and every man in the 305th looks forward to that test. Visit us at Fort Belvoir, Virginia—August 27 to September 9.

306th Cavalry—Baltimore, Maryland

COLONEL MATTHEW F. JAMES, *Commanding*

On May 3d, the Baltimore officers heard a lecture by Lieutenant Colonel Willis D. Crittenberger, of the Chief of Cavalry's Office, on "The Rôle of Cavalry." In this lecture a brief organization of Cavalry units was given as well as the weapons assigned to the units, which was followed by a typical example of each of the missions which could be assigned to Cavalry and ending with a comparison of the strength of American Cavalry with that of various European nations. Major C. H. Keck, Assistant Corps Area Ordnance Officer, lectured on "Mobilization." This lecture covered briefly the Corps Area Mobilization Plan and the various phases of Mobilization. Officers of the regiment gave the following conferences: Lieutenant Graham Dukehart on "Mounted Drill—Platoon"; Major Vernon J. Blondell and Lieutenant Dukehart on "Mounted Drill—Troop," and Lieutenant Colonel Wm. H. Skinner showed movies of previous CMTC duty, lecturing throughout the showing pointing out the corrections that should be made at this summer's training.

Washington officers conducted the following conferences: Lieutenant James G. Daniel instructed on "Ceremonies"; Lieutenant Ford E. Young, Jr., on "Manual of Arms and Dismounted Drill"; Lieutenant Paul E. Mitchler had "Physical Training"; Lieutenant Gilbert B. Layton on "Military Sanitation and First Aid," and Lieutenant George E. Monk had the subject of "Camps."

Recent assignments to the regiment were: First Lieutenants Lawrence L. Long and Carl W. Mumm; Second Lieutenants William P. Cassedy, Lloyd M. Griffin, John S. Higgins, Jr., James M. Woolf, and John G. Pickrell; Privates Vachel H. Davis, Jr., William T. Gordon, and Joseph V. Riggs. Relieved from assignment by Division orders were Second Lieutenants Daniel J. Anderson and Frederick P. Knoll.

At the May convention of the Department of Maryland, R.O.A., Major Vernon J. Blondell was elected First Vice President of the Department.

308th Cavalry—Pittsburgh, Pa.

COLONEL GEORGE H. CHERRINGTON, Cav. Res., *Commanding*

Colonel Bruce Palmer, Chief of Staff, 62d Cavalry Division, honored the regiment with a visit Wednesday, June 21, at which time he inspected the stables and club house at the Training Center and had an opportunity to observe mounted instruction on the regimental drill field which is well lighted with floodlights, making it possible for officers of the regiment to ride and drill during darkness.

Captain Jean T. Ross, Regimental S-3, graduated in June from the Reserve Officers' course at Fort Leavenworth, has returned to Pittsburgh and is taking an active part in regimental affairs.

Lieutenant J. Roy Degenhardt graduated in June from the Fort Riley Reserve Officers' course, has returned to Pittsburgh and is taking an active part in regimental affairs.

On Memorial Day the members of the regiment participated in a Gymkhana held at the Training Center. Winners of the events were as follows:

Open jumping, Captain Stanley W. Rosenbaum, on *Daybreak*.

Dismounted pistol, Lieutenant Jos. McG. Michaelson.

Pair jumping, Captain Elliott E. Perritt, on *Daybreak* and Lieutenant William H. Pfahl, on *Lago*.

Equipment race, Lieutenant Timothy Ruane, on *Sergeant Flannigan*.

Potato race, Captain Elliott E. Perritt, on *Daybreak*.

Free-for-all, teams of three, Major Stanley H. Scott, on *Skipper,* Lieutenant William H. Pfahl, on *Lago,* and Private George H. Cherrington, Jr., on *Tyrant*.

Cavalry Stakes, Private George H. Cherrington, Jr., on *Tyrant*.

Highest score for Regimental Commander's trophy, Captain Elliott E. Perritt.

At the conclusion of the sports events a buffet supper for fifty was provided by the ladies of the regiment.

Major L. G. Gibney, Cavalry, has completed his four-year detail as Unit Instructor and is on his way to Fort Bliss, Texas. The members of the regiment are unanimous in their praise of Major Gibney for the efficient manner in which he administered the affairs of the regiment and for his assistance in preparing and conducting theoretical and practical training.

A farewell party in honor of Major and Mrs. Gibney was held at the club house Sunday afternoon and evening, June 25, at which time Major Gibney was presented with a 308th Cavalry Regimental Insignia and Major and Mrs. Gibney were presented a beautiful chair-side model combination victrola-radio. The party was attended by members of the regiment and their ladies, members of the Regular Army and their ladies, and civilian friends.

The regiment concluded its inactive duty training schedule on June 30 and it is believed that the records will show the past year to be the best since the organization of the regiment.

A special course of practical training is being carried on at the Training Center during the months of July and August and if any officer of the regiment, ordered to active duty, is not in good physical condition, it will be because he is not taking advantage of the training facilities available at the Training Center.

316th Cavalry (3d Squadron), Montpelier, Vermont

MAJOR JOHN BRAINERD, Cav.-Res., *Commanding*

As the Green Mountains of Vermont shed their white of winter the officers of the 3d Squadron of the 316th Cavalry turn their attention to winding up the inactive training period and their thoughts to active training of the summer. The Cavalry camp for the First Corps Area will be held on the Artillery Range of Fort Ethan Allen, with the 1st Squadron of the 3d Cavalry playing host, in June, but from the point of view of Vermont cavalry officers it is unfortunately a camp of the 315th Cavalry from Massachusetts. However, ten officers of the 3d Squadron have applied for vacancies that may exist. The CMTC Cavalry Camp at Fort Ethan Allen will be officered by three officers from the 3d Squadron, 316th Cavalry.

As the inactive training period draws to a close it is interesting to note that the squadron which in its present form only came into existence in the fall of 1938 has shown an increasing interest in required work. Through extension course work, troop schools and one contact camp at Norwich University, a total of approximately 1,235 hours have been acquired by the squadron officers.

Close coöperation between the National Guard and the Reserve Corps is being developed in the First Corps Area and a policy has been established to fill vacancies in the war time strength of the National Guard with reserve officers. Army maneuvers will be held in August for the troops of the 1st and 2d Corps Areas. Three officers of the 3d Squadron, 316th Cavalry, will be on the staff of Brigadier General Leonard F. Wing, commanding the 86th Infantry Brigade, made up of National Guard from Vermont and Maine.

Nearly 90% of the officers of the 3d Squadron, 316th Cavalry, are graduates of Norwich University at Northfield, Vermont. Norwich is the only purely cavalry military college in the country and the squadron is proud of its close affiliation with the university. The squadron is looking forward to a forthcoming order which will assign many of the Norwich Cadets graduating in June to its rolls. After the order is published the squadron commander and the captains of the squadron are planning some fitting welcome for these officers into the squadron.

Fourth Annual 100-Mile Trail Ride of the Green Mountain Horse Association

The Green Mountain Horse Association will hold its Fourth Annual 100-Mile Ride, August 31st, September 1st and 2d, from Woodstock, Vermont. Each year finds the average horse and rider, in better condition than those in the previous year's ride. Each year finds new faces and new horses entered although three riders and their mounts have participated in, and completed all three preceding rides.

The Vermont ride is the "grandfather" of all the other 100-mile endurance rides which are held throughout the country at the present time. It might be interesting to note that no less than twelve 100-mile rides are planned for this year, which shows, to some extent, how much interest in trail riding has increased.

The ride is not a race, for no one is allowed to finish in less than 17 hours. When the ride is over the judges will be interested only in the condition of the horses. The horse that is in the best condition—if his time record is perfect—will be the winner even though the rider has to eat from the mantel for the following week. The horse may look like an old "plug" but here is a contest in which he is judged on what he can do and not on his looks.

The primary object of the ride is to stimulate greater interest in the breeding and use of good saddle horses possessed of stamina and hardiness, and qualified to make good mounts for the trail, and secondly to encourage a better class of horsemanship in long distance riding